THE

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THE

ILLUSTRATION HORTICOLE

AN

ILLUSTRATED MONTHLY REVIEW

OF

NEW AND INTERESTING PLANTS

WITH THEIR DESCRIPTIONS, HISTORY AND CULTURE.

PUBLISHED AND CONDUCTED BY

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« Handbook of Hardy Trees, Shrubs and Herbaceous Plants » etc.

AND BY NUMEROUS AMATEUR AND PROFESSIONAL CORRESPONDENTS.

Vol. I. — New Series.

NEW AND RARE PLANTS,
THEIR CULTURE,
DESCRIPTION, HISTORY AND USES.

FLORICULTURE.

POMOLOGY.

KITCHEN GARDEN.

BOTANY.

NEW BOOKS AND PUBLICATIONS
DEVOTED TO
GARDENING AND BOTANY.

HORTICULTURAL
SHOWS.

LANDSCAPE GARDENING.

ORNAMENTS
AND
IMPLEMENTS
FOR
GARDENS AND PARKS.

HORTICULTURAL LITERATURE
AND
POETRY.

CORRESPONDENCE.

Mo. Bot. Garden,
1897.

GHENT *(Belgium)*.

1874.

HORTICULTURAL CHRONICLE.

January, 1874.

— Changes in English Horticultural Journals. — The opening year signalizes a new era of progress in English Horticultural literature worthy of remark. The *Gardeners' Chronicle,* the first amongst Horticultural Journals in the world, is now published separately, after more than thirty years association with the Agricultural Gazette. The times have advanced, bearing in their wake important cultural improvements, rich introductions, the spread of approved methods, new works, and an ever increasing crowd of garden amateurs. For these additional readers, more space is necessary, and henceforward the *Gardeners' Chronicle* will appear as an independent publication, printed in a better type, and embellished with numerous, beautiful engravings. Both Horticulture and Botany will benefit by this alteration.

The presence of the accomplished botanist, Dr Maxwell T. Masters at the head of the editorial department is our surety for this, for he valiantly bears the burden of the responsible inheritance descended to him from the illustrious and lamented Lindley.

Other periodicals devoted to gardening, such as the « *Journal of Horticulture* », edited by Dr Hogg, and the « *Garden* » conducted by Mr W. Robinson, have also added to their letter-press and increased their engravings. The public must certainly profit greatly from this competition, and it may with truth be said that English Horticultural literature is at the present time largely and worthily represented.

— Flowering of Cocos Weddelliana. — This charming Palm, which has produced flowers on several occasions in the Establishments of M. Linden, has also recently flowered with Mr B. S. Williams, at Holloway, in London. The plant that bore the spathe does not exceed two feet in height of trunk, and this diminutive flowering stature seems to indicate that the species will remain dwarf and prove to be one of the most suitable for table and window decoration.

— Poisoning by Puffballs and by Snails. — In a former article of ours we spoke of the nutritive properties of the *Lycoperdon giganteum,* eaten in a young state, while yet white and firm. It is a well-known esculent in England and America; but it appears, however, that it must be used with caution; for a gardener, M. Loise, nearly lost his life through eating it, though in a small quantity. We should therefore recommend trying this plant, but at the same time advise moderation in taking it, because it is not all stomachs that are capable of digesting it.

But to be poisoned by snails seems almost incredible. Though, according to a Montpellier paper, it seems to have been the case with some persons who had partaken of snails that had eaten some noxious substances, as Box, Deadly Nightshade, Spurge, Foxglove, etc.

It will be a good plan to always let these « land oysters » fast a few days before assimilating them.

— Exotic fruits in Covent Garden. — Just now one may see in the stalls of Covent Garden Market a number of tropical fruits whose presence is unusual in England. They are, the Litchi, *Nephelium (Euphoria) Litchi,* the sugary pulp of which possesses the flavour of a half-dried prune; the Custard Apple *(Anona reticulata)* of the West Indies; the Indian or Barbary Fig *(Opuntia Ficus indica)*; the Cherimoyer *(Anona cherimolia);* Pine apples, Citrons, Shaddocks and Water melons. We should be glad to see this taste for tropical fruits still more extended, as it would add to the effect of our dessert tables, and induce amateurs to undertake their culture.

— Sale of M. Guibert's Orchids. — The celebrated collection of Orchids belonging to M. Guibert, of Passy-Paris, has just been sold for the sum of £ 1,240-». They were purchased for the Vice-roy of Egypt, and suitable structures have been erected for them at Cairo. Their culture will still continue in good hands.

— A new Botanical Publication. — A new Botanical organ, the *Botanischer Jahresbericht,* is announced from Germany. It will be published under the direction of Dr Leopold Just of Carlsruhe, and will appear annually, in the autumn. The object is to provide a concise summary of all the Botanical publications of the year.

— Flowering of Hausmannia jucunda and Amaryllis procera. — The former of these two plants was introduced into France now several years ago by M. Ramel, the zealous propagator of *Eucalyptus globulus.* He obtained it from Melbourne, Australia, through the kindness of his friend, Baron F. von Müller, who named and described it. The only plant imported was in the first place sent to the *Museum* Garden of Paris, whence, by a series of adventures, which we forbear relating here, it found its way to the Municipal Garden at La Muette. It has recently flowered for the first time in Europe. The purplish and yellow flowers are borne in short axillary racemes. It is a member of the Bignoniaceae or Trumpet-flower family. We shall refer to this plant again in a special article.

Amaryllis procera was introduced from Brazil, in 1862, by M. Binot, and named by M. Duchartre, its description alone occupying no fewer than 13 pages and a half of the *Bulletin de la Société centrale d'Horticulture de France* (1863, pp. 425 and following). It has, however, not fulfilled all the expectations it gave rise to. The greater number of roots introduced have not produced flowers a second time, and the number even of those that opened their perianths once, was very limited. We received several hundreds of it at La Muette, which, like those obtained later by M. Loise, flowered only in part; but in spite of every care, they all perished. Nevertheless, according to a letter from the chief gardener, M. Troupeau, there is a fine plant of it in bloom now in that establishment. The plant bears a large number of the beautiful lilac flowers, which won our admiration the first time we saw them. We have requested M. Troupeau to inform us by what means he has succeeded in flowering this magnificent plant.

Ed. André.

Pl. CLVI.

ONCIDIUM FUSCATUM, REICHB. F.

DUSKY ONCIDIUM.

NAT. ORD. ORCHIDACEAE.

For ETYMOLOGY and GENERIC CHARACTER : See Lindl. folia Orchidacea, I.

SPECIFIC CHARACTER : *pseudobuldi* oblongi pauci-carinati, nitidi; *folia* oblongo-acuta subpedalia : *racemus* strictus 6-8 florus (et ultra) superne fractiflexus, e vaginis scariosis acuminatis oriens; *bracteæ* glumaceæ acuminatæ ovaria pedicellata dimidio æquantes; *sepala petalaque* cuneato-ligulata, obtusa undulato-crispula; *labellum* cuneato-oblongum flabellatum antice bilobum, basi velutinum, obscure 3-7 carinatum, obscure purpureum, margine anteriore albo limbatum, medio discum incrassatum vernicosum ferens, *columna* brevissima; tabula infrastigmatica superne bidentata. — In Peruvia et Nova-Granata legerunt Pœppig Warscewicz, Roezl, etc. — Charact. pro parte ad viv. et præsertim e cl. Reichb. descript. desumptis. — Vidi vivum in horto Lindeniano. — Ed. A.

Oncidium fuscatum, Reichb. f. *Xenia.* I, p. 132,
Miltonia Warscewiczi, Reichb. f. *Xenia*, I, p. 132.
Ondicium Weltoni, Hort. Engl.

The genus *Miltonia* was established by Lindley in 1853, for some Orchids with large, handsome flowers, of distinct appearance, which he separated from *Oncidium* and *Odontoglossum* on account of their shorter column, and from *Brassia* by their auricles. In his revision of this tribe, M. Reichenbach states that he has found these characters to be very uncertain in *M. spectabilis* and *M. Russelliana*, and he reduces the genus *Miltonia* to the rank of a simple section of *Oncidium*. This view has not been generally accepted, and we think that the " peculiar " habit pointed out by Lindley as distinguishing the *Miltonia* group ought to be taken into consideration, even if the character of the column is variable. We must, however, own that the plant, which we now figure is extremely puzzling. We can understand the hesitation of M. Reichenbach to refer it to one or the other of the genera, and the wavering of amateurs between the names *Miltonia Warscewiczi* and *Oncidium fuscatum*. But we will leave the case as it is meanwhile — *adhuc sub judice lis est* — and be satisfied with recommending this superb species. Magnificent, indeed, as a simple glance at the plate will convince anyone far better than a mere description. Its beautiful flowers are variable in colour if not in form. Usually, the labellum is of a dull purplish violet, varnished in the centre and white towards the margin. Occasionally, as shown in the plate of the " *Flore des Serres,* " the centre is marked by a large yellow spot, which is wanting in the greater part of the varieties. This association of decided colours, divided by pure lines, and the conspicuous setting of the flowers will afford ample attraction to orchidophilists when they have once seen this charming plant in bloom.

For the recent introduction of this plant into his establishment, M. Linden is indebted to M. Roezl. It was found by Poeppig in Cuchero, Peru, in 1830, then by Warscewicz, and finally by Purdie in New-Granada, before later expeditions had introduced it alive into Europe. Ed. André.

THE KITCHEN GARDEN AND ORCHARD.

FRUITS ADMITTED BY THE FRENCH POMOLOGICAL CONGRESS IN 1873.

At the last meeting of the members of this body, held at Marseilles on 20 th. of June last under the presidency of M. P. de Mortillet, their studies were continued. As heretofore, the results of their labours were arranged under three different heads: fruits admitted by the congress; fruits struck out of the list, as not worthy of recommendation, and fruits re-inscribed for further trial. The fruits admitted this session are enumerated below, after M. Michelin, the secretary :

Cherry (of the Black Heart class) *pourprée hâtive.* Very large, stalk long and slender. A productive, very early sort.

Raspberry, surpasse Falstaff. A commendable variety, producing two crops of fruit.

Pear, beurré de Nivelles. An excellent late variety, raised by M. Parmentier.

Pear, Jules d'Airoles. A seedling from M. Léon Leclerc of Laval. Flesh delicate, juicy, melting, tender, ripe in December.

Apple, Bouque preuve. A late flowering variety largely cultivated around Marseilles.

Apple, rose de Provence. Another good apple, widely distributed in the South.

Grape, Tschaouch Safra Usum. Handsome bunches with large white berries. Introduced from Turkey.

The foregoing seven fruits are the only ones passed by the Congress at this sitting. The total number of fruits tried and certificated by the congress since its foundation, is 464, divided as follows amongst the different kinds : 176 Pears, 71 Apples, 2 Quinces, 1 Service, 1 Medlar, 26 Peaches, 5 Freestone Nectarines, 1 Cling-stone Nectarine, 12 Apricots, 32 Plums, 26 Cherries, namely : 10 of the Bigarreau class, 4 of the Black Heart class, 7 of the May Duke class, and 5 of the Morello class; 3 Almonds, 6 Nuts, 42 Table grapes, 10 Table and Wine grapes, 17 Wine grapes, 5 Red and White Currant, 1 Black Currant and 1 Mulberry.

The Number of volumes published by the congress amounts to eight, forming a useful collection for the pomologist. They are printed in the first place for the subscribers, but may be purchased by the general public.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

L'Illustration Horticole.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

Pl. CLVII.

CEROXYLON ANDICOLA, HUMBOLDT & BONPLAND.

CEROXYLON OF THE ANDES

NAT. ORD. PALMACEAE.

ETYMOLOGY: from Κηρος, wax, and ξυλον, wood: Wax Palm.

GENERIC CHARACTER: *Caudex* simplex: *folia* pinnata; *spadix* paniculatus. *Flores* masculi et hermaphroditi steriles in iisdem spathis; in infimis solummodo femineis; — *masc.: calyx* duplex, exterior pusillus, semitrifidus; interior multo major, petaloideus, triphyllus, foliolis acutis, *stamina* 12-14 plerumque 12; tria calyci interiori alterna caeteris crassiora; *filamenta* brevissima, *antherae* lineares, calyci interiori subaequales; insertio in ima calycis parte incrassata; *pistilli* rudimentum. — *Hermaphr.: ovarium* imperfectum, *stylus* nullus, *stigmata* tria, caetera masculorum. — *Fem.: calyx* precedentium, *stamina* nulla; *drupa* globosa, nux conformis parum crassa, unilocularis, monosperma, basi imperforata; *semen* conforme; albumen solidum; embryo sublaterali-basilaris.

SPECIFIC CHARACTER: palma excelsissima, inermis, *caudice* extus cera indurata incrustato, vestigiis elapsorum foliorum annulato, *foliis* pinnatis, pinnis subtus peculiari pube argenteis; *spatha* monophylla, hinc dehiscens, glabra, spadix recurvatus, propendens, ramosissimus, ramis paniculatis. (HUMB. et BONLP., *Plantes équinoxiales*, I, p. 1, t. 1 et 1bis).

Ceroxylon andicola. HUMB. et BONPL. l. c. — Mart. Hist. nat. palm. adn. 314.

Iriartea andicola. SPRENGEL. — Kunth, enum. plant. III, 196, n° 7.

This splendid Palm-tree, discovered by Humboldt and Bonpland on the mountain chain of Quindiu, which separates the valleys of the rivers Magdalena and Cauca in New-Granada, in 35, N. lat., is one of the handsomest members of the vegetable kingdom. It was found, too, by M. Linden at the Volcano of Tolima, on the Sierra Nevada of Santa Martha, and also occurs near the top of the peaks of San Juan, in the vicinity of Guaduas, and probably in other localities as well. Its habitat on the lofty mountains has surprised all botanists, for even within the tropics Palms rarely ascend beyond an altitude of 5000 feet. But it is otherwise with the Wax Palm, which is not found in the plains, but, on the contrary, rears its majestic crown of pinnate leaves upon a lofty, slender stem on the mountain slopes, at an altitude varying from about 5700 feet to 9250 feet above the sea-level, equal to the height of the pass of Mont Cenis. It has even been found in a region of far greater elevation than that of *Quinquinas*, and its extreme limit is within about 2500 feet of the region of perpetual snow.

This beautiful Palm, drawn by Humboldt on the spot, and reproduced by Turpin in the « *Plantes équinoxiales* », rises straight in the air to a height of more than 190 feet, forming one of the tallest trees known, and perhaps the very tallest of the Palm tribe inhabiting tropical America.

Its leaves frequently attain a lenght of 20 feet, supported by a cylindrical stem from 12 to 18 inches in diameter, swollen out at about half its height and again constricted in the upper part. It is yellow, and smooth as a Bamboo, and marked with rings or scars below the leaves, resulting from the dilated base of the petioles. The resinous, waxy substance is found adhering to, and coating the rind to a thickness of about one or two lines, between these rings. It is collected and melted by the Indians, who employ it like wax to make their skin shine. According Vauquelin's analysis, it is composed of two parts of resin, and one part of a substance which is precipitated in alcohol and possesses all the chemical properties of wax; but it is rather more brittle than beeswax. Mixed with one third of tallow it is said to furnish very good candles.

The spadices of paniculate flowers are very much branched, and from 3 to 4 feet long; some of them bearing male flowers on their lower part, and half abortive or sterile, male flowers on their upper part, whilst others bear female flowers, succeeded by spherical, 1-seeded drupes about half an inch in diameter, of a violet colour when ripe, and somewhat sugary; hence they are sought after by squirrels and birds.

The principal characters upon which the genus *Ceroxylon* is founded are, according to Bonpland, an undivided spathe, separate spadices for the male and hermaphrodite flowers, flowers with from 12 to 14 stamens, pistil with 3 styles and a 1-celled, 1-seeded drupe.

The closed allied genus *Iriartea* differs in its monœcious flowers, divided spathe and single style.

Since the discovery of *Ceroxylon andicola*, several other wax-yielding Palms have been noted, amongst which we may mention the *Carna-uba*, *Copernicia cerifera*, the object of some extensive manufactures. Some of the products furnished by this Palm were exhibited at Paris in 1867; and they may also be seen in the economic museum at Kew. *Myrica cerifera*, another wax-bearing tree from *New Granada*, might compete with *Ceroxylon*; it yields wax in much larger quantities. Other advantages possessed by the *Ceroxylon* are its hard, durable wood, which the natives employ in the construction of their dwellings; its leaves, which, like those of *Cocos butyracea* of the Orinoco, serve to cover boxes; and the fibre at the base of its petioles is used for similar purposes as that from *Arenga saccharifera* of the Molucca Islands, and the Chiqui Palm, *Attalea funifera*, of the Amazon, etc.

It will be seen, then, that this highly ornamental tree commands our interest and admiration not only as an embellishment for the gardens of the South, but also on account of the possibility of its being cultivated as a useful tree. It will, doubtless, prove one of the grandest introductions from South America, and we may congratulate M. Linden upon his being able to enrich our collections with so noble a plant.

ED. ANDRÉ.

Pl. CLVIII.

CAMELLIA DON PEDRO.

NAT. ORD. TERNSTRŒMIACEÆ.

For the ETYMOLOGY of the name, and the GENERIC and SPECIFIC CHARACTERS, see Endlicher, Genera plantarum, 5425 et DC. Prodromus, I, 529.

DESCRIPTION OF THE VARIETY: A plant of the first rank, with stout branches, supporting large, thick, broadly oval, serrulate and almost crenulate, shortly mucronate leaves. Flowers admirable, imbricated, regular, with rounded oval, orbicular, retuse or reniform, slightly apiculate, distant, fleshy petals, of a beautiful white, here and there faintly painted with longitudinal stripes of a delicate rose. Raised from seeds in Portugal.

The collection of Camellias figured in the *Illustration Horticole* is already legion. We may add that it is a noble legion, and for this reason we think it will not be without use to pass them again in review before our readers. The figures and descriptions may be found by reference to the general index, published at the end of 1873.

A SELECTION OF THE MOST BEAUTIFUL CAMELLIAS, FIGURED IN THE « ILLUSTRATION HORTICOLE. »

Adriana. Vivid rose, with unusually large petals.

Alba ornatissima. Pure white, finely imbricated.

Angelo Cocchi. White ground, slighty tinged with pink and variegated with broad, bright purple bands.

Archiduc Etienne. Clear rose, spotted with bright crimson.

Baron de Vrière. Flower beautifully imbricated, lively rose slightly paler towards the centre.

Bella Romana. Like a gigantic *Bizarre Carnation*, rose striped with bright crimson.

Bertha Giglioli. Flower medium, delicate rose veined with a deeper tint; petals with a white border; imbrication perfect.

Caprioli. Flower medium, regularly imbricated; petals oblong deeply retuse, of a beautiful bright carmine, each petal having a broad, central, longitudinal, white band, the regularity of which gives the flower a star-like appearance.

Carlotta Peloso. Flower very large, brilliant scarlet red with broad flakes of white; imbrication perfect.

Caterina Rossi. Delicate rose, streaked with purple; imbrication perfect.

Clodia. Flower large, bright crimson, with distant whitish stripes.

Comte de Toll. Good form; delicate rose, veined with carmine and striped with white.

Comtesse Pasolini. Delicate fresh rose, passing into pure white at the circumference; a free bloomer.

Constantin Tretiakoff. White ground tinged with rose, deeper towards the centre.

Contessa Tozzoni. Flower regularly imbricated; pretty bright rose, shading off to almost pure white towards the margin of the petals.

Cora L. Barton. Pure white ground finely striped with delicate rose.

(*To be continued.*)

MISCELLANEOUS.

— THE PALMS OF NEW-CALEDONIA. — At one of the recent meetings of the *Académie des Sciences*, M. Brongniart communicated an interesting paper on the Palms indigenous to New Caledonia. At some future time we shall refer to this article in detail, but we may here mention that eighteen species of the Palm tribe have already been discovered growing wild on this island, without counting the Cocoa-nut Palm, *Cocos nucifera*, which is believed to be an introduced plant, and has long been in cultivation. The whole of the species belong to the sub-tribe *Kentiae*, and are distributed in three genera by M. Brongniart, namely: the old genus *Kentia* and two new ones of his own creation; *Kentiopsis* and *Cyphokentia*.

— INTERNATIONAL EXHIBITION OF FLORENCE. — The latest news we have received from Florence is to the effect that the preparations for this grand floral display are being pushed on with the greatest activity. Moreover, we ourselves are but recently returned from thence, and can add a word from ocular demonstration. Professor Parlatore is everywhere. Labourers are busily engaged in all parts of the old Botanic Garden, putting it in excellent order for the reception of the precious phytological collections, which must be finally established in their places at the opening of the Exhibition. The Herbarium, which is a marvel of methodical classification, and highly advantageous for consultation by the scientific man, is enriched, as may be known, by the valuable Herbarium brought together by Webb, who made a gift of it to the gay Tuscan capital. The bust of this erudite and generous botanist will be inaugurated upon the occasion of the forthcoming Horticultural and Botanical Congress, in the same hall, indeed, where the treasures he collected while living, are preserved. New glass-houses have been erected in the annex of the botanic Garden, and on the other side of the covered walk of Boboli Gardens. Already some new plants have been installed in these houses, so remarkable for the curious old specimens of different plants they contain. Here, amongst other curiosities may be seen the finest collection of strong specimens of various *Plumiera* that exists in Europe. The plants are covered with a profusion of bloom every year. The locality of the Exhibition will be magnificent. It is the new Market, a superb edifice, recently built. The Committee and President are working most assiduously in the preparation of programmes, competitions, arrangements for the Congress, Botanical excursions, etc., etc. We are promised a notice on the Botany of Florence, wich will be extremly interesting. In a word, M. Parlatore scarcely eats or sleeps. We have, therefore, good reasons for believing that the « City of Flowers » will surpass itself, and that the Exhibition of Florence will fulfil the most sanguine hopes that this beautiful country has awakened in us.

ED. ANDRÉ.

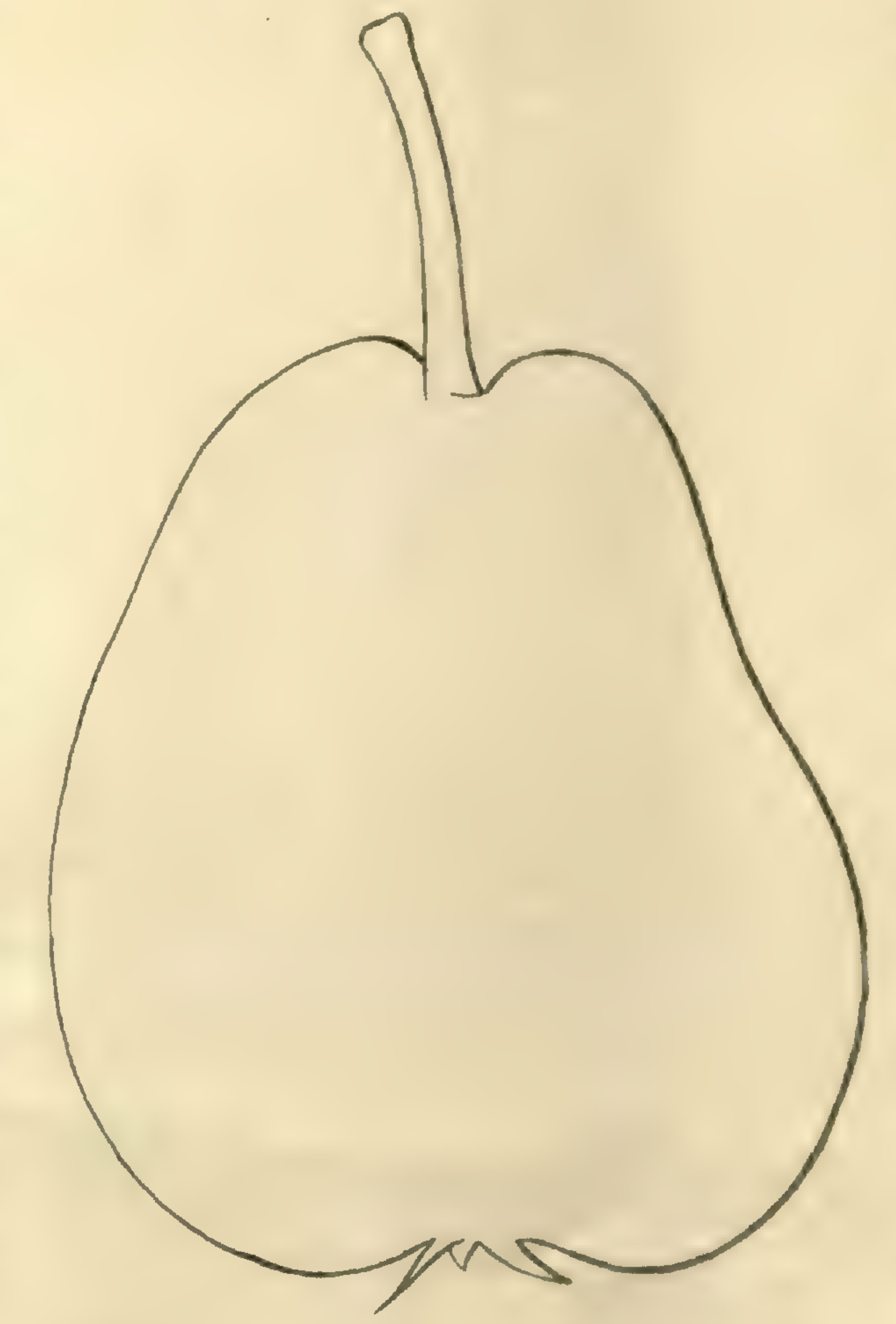
L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

A NEW PEAR, DE LACROIX.

This excellent variety is of wild origin, having accidentally sprung up, about forty years ago, in the Park of Lacroix-de-Bléré, situated in the midst of the fertile country of Touraine, which has been justly termed « the Garden of France. » The proprietor, M. Ed. André, editor of the *Illustration Horticole* has religiously preserved the mother plant in the dendrological collection he has been forming there for some years past. The tree is of vigorous growth and narrow, erect habit, nearly all of the branches ascending. Every second year it produces a crop of several hectolitres of fruit, having some resemblance to the *Doyenné d'hiver*, and furnishes a capital dessert in December and January. We have just tasted some of its fruit sent to us by M. André, and we are able to say with certainty that it bears carriage well, without injury, a valuable quality in these times of exportation of large quantities to foreign countries.



As it grows, in a normal state, without having been grafted, trained, pruned, or otherwise artificially assisted, it produces fruit below the medium size, of an ovoid shape, projecting at the base. Eye large and conspicuous, set in a shallow depression; calyx lobes long, acute and persistent. Stalk from 10 to 12 lines long, woody, straight and slender, inserted in an abruptly depressed cavity of moderate depth. The smooth, even, firm, thick skin is of a pretty yellow, when ripe, sprinkled with russet spots, brighter and tinged with orange on the side next the sun, and dashed with longitudinal, narrow bright red streaks mingled with rose on the best coloured fruits. Flesh almost white, dense, moderately rich; granular, gritty near the core, like some of the *Crassanes*, juicy, half-melting, sugary, with a very agreeable flavour, heightened by a slightly acid taste, leaving a soft aroma in the mouth.

One might fancy that one was eating a *Doyenné d'hiver* or a *Doyenné d'Alençon*, with less of their delicate richness and more aroma.

It comes into season about Christmas and continues until the end of January, and sometimes even longer.

The fruit is an excellent keeper, and will prove a great acquisition to our Winter Pears. We may venture to assert that it will improve under cultivation, that is to say by grafting and pruning. It will succeed as a standard and be valuable for marketing, a great advantage now-a-days. The development of the flavour of the fruit and the productiveness of the tree, show that it would flourish even against an espalier wall of north aspect. We have given the name of *Pear de Lacroix* to this good and handsome pear, to commemorate the name of the estate where it sprang up spontaneously.

Ch. Baltet,
Troyes.

ESSAY ON ACCLIMATIZATION IN THE VEGETABLE KINGDOM.

Is it possible to acclimatize or accustom plants to live and flourish in the open air under the influences of a fresh climate, differing in temperature from that of the place whence they where brought? We reply no, if immediate acclimatization be the aim, and especially if the divergences in temperature of the original and adopted climate are great. But in spite of these variations, we should look for success if the attempts at acclimatization are pursued in a rational manner.

Like beings of the animal kingdom, plants acquire constitutions, characters and forms suitable to the climate and the medium in which nature has placed them. They are organised, in a normal state, at least, for the region where they exist, and not for a different one whither they are suddenly transported. Both plants and animals, when removed to a new country, should be subjected to artificial conditions, approaching as nearly as possible to the climate of the place from whence they came. We will confine ourselves to plants, and we should say, speaking generally, so far as they are concerned, that to secure complete, or even partial acclimatization, it is of importance that they should bear fruit in the artificial medium supplied. It is unnecessary to say, as we do not possess, or at least in rare instances only possess, the material means, houses and heating apparatus, adapted for the production in our regions of adult development and the fruiting stage of the larger tropical plants, that we can find no other use for them than to fill and ornament our stoves or form botanical collections. In the present state of the means, actually within our reach, and our limited knowledge of acclimatization, we will think of adapting to our cold or temperate regions only those tropical plants of moderate stature, and especially those that are useful and arrive easily at maturity. Another time we may discuss the inverse question, the acclimatization of plants from cold regions in temperate or hot climates.

If, supposing we have the means of rearing them, we have been fortunate enough to obtain good seeds of an exotic plant, one step, perhaps an important one, has already been taken towards the acclimatization of that plant. Although placed in an artificial medium, sheltered from the extreme or relative excesses of the new region, the introduced plant, which, we will suppose, has fruited, must nevertheless, in some measure, have experienced the influence of the climate. The seed obtained under these conditions, will, as a matter of course, have suffered the same influence, and if they do not yield a progeny having at once the characters suitable to the new climate, there will probably be some subjects amongst them

exhibiting variations or changes in form in some of the organs of the plant. This is a break or disturbance in the mode of existence of the imported species.

The disturbed subjects, cultivated with especial care, but mainly with the aim of gradually accustoming them as much as possible to the open air, will in their turn produce seed, signalizing another step towards acclimatization. Successive generations may perhaps accomplish it, or at any rate they will give issue (especially if some well directed hybridizations have been brought to their aid,) to hardier varieties that will perpetuate this valuable character, hardiness, and perhaps with it other equally desirable qualities.

We observe with regret that a great many trials at acclimatization have not succeeded; but in almost all cases, if we look into them, we shall find that it has been because the essential conditions of success were disregarded. We may add, too, that acclimatization, said by a many persons to be impossible, has been seriously followed out by very few.

One part of French territory, the Mediterranean shores, from Toulon to the Italian boundary, is the scene of some interesting acclimatizations. Here may be seen in the open air, and frequently of large size: *Livistona australis* (*Corypha australis*) from Australia; *Livistona sinensis* (*Latania borbonica*) China; the *Sabal Adansoni* of Carolina, which fruits regularly; *Sabal umbraculifera* of the Antilles; *Cocos campestris* from Paraguay; numerous Australian species of *Dracaena* or *Cordyline*, many of which fruit; *Phoenix reclinata* from Natal, and Ph. *paludosa* from India, one specimen of which has ripened seeds, etc. We might enumerate a great many other plants belonging to different families, all from countries having a warmer limate than the coast in question, but which are nevertheless at home, and for the greater part mature their seeds; the *Agaves* of Mexico; *Phaseolus caracalla* from the East-Indies, with its highly curious and sweetly fragrant flowers; various species of *Abutilon* from Brazil and Peru, *Daubentonia* from Mexico, the exceedingly pretty *Clianthus* from Australia, *Kennedya* and numerous species of *Acacia* from the same country; the *Erythrina Crista-Galli* from Buenos-Ayres; various beautiful *Cassiae* from South America; the large Australian genus *Eucalyptus*, the trees of the future for the South of Europe; the elegant and beautiful *Casuarinae* from Australia and the Pacific Islands, etc., etc.

All these different plants are naturalized in their new home in a temperature below that of their respective native countries. They prove that plants as well as animals possess sufficient vital power to accommodate themselves to new conditions of climate and different nourishment. This acclimatization, we believe, is particularly interesting, well worthy of note in its progress, and as affording instruction on the question under consideration. Let us add, likewise, that it is facilitated or rendered possible on the coast from Toulon to Nice by a certain regularity of temperature that prevails, extreme and sudden changes of temperature being very uncommon. The never very rigorous winter is gradually and slowly ushered in, and gently, by small degrees plants become exposed to a low temperature. Thus, for instance *Livistona sinensis* and *L. australis* will bear a frost of 5° or 6° Fahrenheit, or even more, with impunity. It is with these as with so many other exotic plants quoted above; their tissues are little by little habituated to the lowering of the temperature, slowly and serviceably hardened, and thus prepared to support without harm, an abatement of temperature that would destroy the same plants if it came suddenly upon them in their native country. It appears to us by no means impossible that some, at least, of the plants noted above as acclimatized on the Mediterranean coast, may, in course of time, through a succession of generations, give birth to a race sufficiently hardy to justify an attempt to acclimatize them more to the North, in a climate with a temperature still further removed from that to which their early progenitors were accustomed in their native country.

NARDY senior.
Hyères.

Summer House of Rustic Ironwork.

Although we are by no means partial to artificial illusions and pride ourselves upon belonging to the school of architecture termed *honest*, there are cases in which we recommend imitations, and this kiosk is an example of them. It is constructed of rustic ironwork in imitation of wood, both in form, and in the colour of the paint employed. We designed and erected this little structure for one of our customers in Guernsey. The ironwork forming the frame, was invented by a skilful Parisian manufacturer, M.Jacquemin. The roof is of zinc, and the basement is inclosed with sheet iron, resting upon three courses of brickwork, concealed by climbing plants.

One might build this little ornament for the pleasure ground without the aid of an architect, by means of the drawing given above, which we had executed by Parisian builders, Messrs. André and Fleury. It is needless to add, that the same design might be reproduced in whole wood, by giving more substance to secure sufficient strength.

ED. A.

MISCELLANEOUS.

NEW CALEDONIAN ELÆOCARPI.

New Caledonia is incontestably one of the isolated spots of the globe, still very little explored, which might afford many valuable additions to our gardens. The rich collections of dried plants, formed within the last fifteen years, by Messrs. Vieillard, Pancher and Balansa, the principal French explorers of this Island, contain upwards of 2000 species. Certain genera and groups of species are endemic or peculiar to this country, few of them occurring on the mainland of Australia, the nearest land of great extent. The Flora has greater affinity with the vegetation of the Malayan Islands, and the future will probably prove the hypothesis which one might, from this circumstance, advance with regard to New-Guinea. Some forms, although new as species or genera, have closely allied representatives in very distant parts of the world. Thus, to confine ourselves to one or two examples, it is rather remarkable to find a monotypic genus, *Cunonia capensis* Thunb., of which no congener had previously been discovered, suddenly enriched by five new species, all New Caledonian. Another interesting type, the genus *Elaeocarpus*, does not offer the same anomaly, because it is widely dispersed in India, the neighbouring islands, Australia, and the islands of South Africa; but all the New Caledonian species are distinct.

A genus, *Crinodendron*, of a single species, native of Chili, that scarcely differs generically from *Elaeocarpus*, having a capsular instead of a drupaceous fruit, furnishes an analogous instance of isolation to that of the single species of *Cunonia* at the Cape of Good Hope. [1]

The number of published species of *Elaeocarpus* is considerable, exceeding 70. By adding 15 species, subsequently published by Messrs. Brongniart and Gris and 5 or 6 forms still inedited, we have very nearly a hundred species. But the number of New Caledonian species is proportionately very large, since, independently of the new recruits which we may reasonably assume to exist in the unexplored parts of this Australian Colony, she claims a fourth of the known species of this beautiful genus of Tiliaceae.

In general, these plants possess little interest from an ornamental point of view, hence they are rarely seen in cultivation. They are trees of diverse habit, for the greater part with elegant foliage; but their small, racemose flowers are not particularly striking and attract only the botanist. Nevertheless, a section of this genus *(Monocera)* which is scarcely admitted now, is comprised chiefly of trees remarkable for the amplitude and sometimes for the silvery tint of their foliage, as well as the brilliancy of their flowers. The *Flora Vitiensis* of the energetic and lamented Seemann, a distinguished botanical traveller, contains a figure of one species of this group [2], which gives an idea of the beauty of these plants. It is the *E. Storckii*, Seem. The rosy-carmine flowers owe their colour in part to the calyx and in part to the corolla, of which the top is rose and the base yellowish. They are arranged in drooping racemes, encircling the upper part of the branches, which terminate in tufts of entire, coriaceous leaves, adding greatly to the effect of the flowers they crown. *E. speciosus*, Ad. Br. & Gris, must be placed near the species to which we have just referred: but this has silvery leaves, silky beneath, with conspicuous secondary penninerves. It is a magnificent tree, about 25 feet high, says M. Vieillard. A second species, *E. geminiflorus*, Ad. Br. & Gris, has much larger, but less numerous flowers than the preceding; the silky petals are very finely fringed, and the leaves remarkably tumid. Unfortunately the collectors have not indicated the colour of the flowers, and it cannot be ascertained from dried specimens. This tree, according to M. Balansa, attains a height of 50 feet, and is pretty general in the island. The Museum garden received seeds from M. Pancher some 10 or 12 years ago, and since that time one species, *E. persicaefolius*, Ad. Br. & Gris, has proved that this class of plants succeed very well in a cool house.

It is nearly impossible to pass without mention a splendid new genus *(Dubouzetia)* of the *Elaeocarpeae*, after having treated of the type of this suborder, especially as this genus is almost inseparable from it, and in its botanical characters comes close to *Crinodendron*, the fruit of which is something similar. The peculiarity is in the development of the tissue answering to the chalaza of seeds, which is such, that each seed, when mature, is provided with a variously twisted vermicular appendage. *Dubouzetia campanulata* of Pancher [3], is a shrub from 3 to 6 feet high, with alternate, narrow, cuneate leaves, tomentose below. As in the *Elaeocarpus* before mentioned, they are clustered at the top of the branches, and from their midst rise the peduncles, each bearing a solitary flower, of the size of *Anemone pulsatilla*. The calyx consists of 5 divisions, inclosing 5 entire petals, considerably longer than the sepals and of a beautiful red colour, which is retained by the dried specimens. The numerous stamens (35 to 40) have long, yellow anthers, opening at the tip, as in *Elaeocarpus*.

This magnificent plant was sent to the Museum herbarium by M. Pancher in 1860, under the name which has been adopted for it. It is indisputably the most striking member of the group *Elaeocarpeae*, and its culture would probably be no more difficult than for the species of *Elaeocarpus* itself.

Two other species of *Dubouzetia* have been described, but they are far from equalling their congener in elegance and in the size of their flowers. M. Pancher dedicated this superb plant to rear-admiral Dubouzet, then governor of New-Caledonia.

J. Poisson.

[1] *Crinodendron* is united with *Tricuspidaria* by Messrs. Hooker and Bentham, who discovered that it had been incorrectly described, the calyx, which splits and falls away early, having been overlooked, the petals described as sepals, and the fleshy lobes of the disk as petals. *Tricuspidaria* is distinguished by its truncate calyx, regularly 2 lobed or toothed petals and dehiscent, capsular seed-vessel. W. B. H.

[2] *Flora vitiensis*, fasc. I.

[3] *Nouv. Archives du Mus.*, vol. IV, p. 34, pl. 13.

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Le Fraisier (the Strawberry Plant) by the Count de Lambertye.

In 1863, one of the most distinguished writers for the Horticultural Press, Count Leonce de Lambertye, published a complete treatise on the Strawberry. This book was a great success. It constituted a monography at once botanical, historical and cultural, elaborated by a rare genius for co-ordination, and containing practical instructions based upon the personal experience of the author.

Up to that period, the publications on the Strawberry were limited to a few special works and some scattered papers in the periodical Reviews and Bulletins of Horticultural Societies. The old authors, such as Claude Mollet and La Quintinye, said little about them, and the only varieties known were the Alpine and Hautbois; but they were already the objects of skilful culture.

In 1776 the « *Histoire naturelle du Fraisier* » by Duchesne appeared, an excellent book, which gave a great impulse to the cultivation of the Strawberry. It enumerated ten *races* of Strawberries, founded mainly on those then just published by Miller in his *Gardeners' Dictionary*, which had then reached its seventh edition, and may justly pass as the most complete horticultural treatise of its period. Miller described: the Wood Strawberry, red and white varieties, the Virginian Scarlet, another variety from Louisiana; the Alpine Strawberry, which is no other than the « *Fraise de tous les mois* » of the French, known since that epoch by the Dutch under the name of *Fraise perpétuelle;* the Hautbois, an European variety descended from *Fragaria elatior*, which Miller erroneously believed to have come from America; and the Chili Strawberry, brought from that country in 1712 by Frézier, who sent it at first to the king's garden at Paris. From thence it passed over to Holland, to Mr George Clifford of Amsterdam, whence Miller introduced it into England, in 1727.

Up to Poiteau (Arbres Fruitiers, 1807 to 1836) there was little change. At that period 25 varieties of the Strawberry were grown.

But in England, through the introduction of the American Strawberries, and the varieties of seedling origin, great progress had already been made. Lindley's Guide in 1837 contained 62 varieties.

Their culture improved likewise. Count Le Lieur, in the *Pomone française* (1842), brought it to such a point that his method is considered the best even to this day. Fortunate acquisitions succeeded each other, and already in 1842 the catalogue of the Agricultural Society in London included 115 varieties, divided into 7 classes. The same year a German, author, Legeler, published in Berlin a manual of forcing *(die Treiberei)* wherein he treated of the Strawberry. M. Courtois-Gerard, 1843, gives tolerably ample information on this subject in his *Manuel pratique du jardinage.* A long series of articles in diverse publications rapidly swell the sum of our knowledge of Strawberries.

In 1858, M. Mac Ewen, a young gardener of great merit, whom death removed at the very moment he was appointed Director of the London Horticultural Society's gardens, published a pamphlet of 30 pages on the culture of the Strawberry, a work of great excellence, causing a keen regret for the loss of its author. The knowledge hitherto amassed was now augmented by the results of the labours in hybridisation of M. de Spreckelsen, a gardener of Hamburg, on *Fragaria lucida*, which appeared as though it would cross with the biferous Strawberries, a hope which has not since been realised.

A year later, in 1859, Messrs. Koch and Fintelmann of Berlin and Potsdam, published in the *Wochenschrift* a list of 100 varieties of Strawberries, from which about 50 varieties of slender merits should now be eliminated.

Since then, various works devoted to the Strawberry have seen the light, and amongst the best we must mention those of M. Robine, who possess a fine collection, and M. Gloede's book.

Count de Lambertye has maintained his position in the first rank amongst his *confreres* on this interesting subject. The book he has just published is the second edition of the treatise of 1863, and is improved by the knowledge and experience of the last decade; but the author has deemed it advisable to condense it, making of the whole a popular cheap edition. We cannot too highly recommend its perusal; it is in fact a *vade mecum* without which a gardener's library is not complete. The best praise we can bestow upon it is that its usefulness is equal to that of other works by the Count de Lambertye, a respected teacher, who utilizes in the most noble manner the leisure hours of a retired life in the country.

Ed. André.

HORTICULTURAL CHRONICLE.

February, 1874.

— The genus Tulipa, by Dr Regel. — In the number of the *Gartenflora* for October, 1873, which we have only just received, we find a noteworthy article from the pen of our learned friend, Dr Regel, on the genus *Tulipa*, including the description of a new species, *T. Greigii*, Rgl. This beautiful species is characterized by its dwarf habit and broad, spreading leaves, which are scarcely borne above the surface of the ground, and are elegantly variegated with longitudinal brown stains. A solitary flower, of the most lovely red colour, with broad outer, and less acute inner perianth-segments, surmounts the foliage, forming altogether an ornamental plant of the first rank, designated the *Queen of Tulips* by Dr Regel. It is a native of Turkestan, and has been dedicated to one of the most learned and most amiable of Russian gentlemen, General Greig, President of the Horticultural Society of St Petersburgh, whose warm reception, on the occasion of our journey to Russia in 1869, we recall with pleasure.

The *Conspectus* of the genus, as drawn up by Regel, comprises 26 species, and deserves perusal. We hope to be able to speak more fully of it upon some future occasion.

— Pitcairnia Andreana. — The same number of the *Gartenflora* contains a figure and description of this new Bromeliaceous plant, under the name of *P. lepidota*; but M. Linden had already named it after us in the August number of the *Illustration Horticole*. Probably Dr Regel had not seen that number when he gave the plant another name, subsequent to the publication of the species.

— A Correction. — We also find in the above-named journal, in an article by M. Jäger, at page 304, that we are accredited with the re-modelling of the Prater at Vienna. This is quite a mistake; for we have never been called to Vienna, and have had nothing whatever to do with the works that have been executed there. M. Jäger has, moreover, glossed his work over with personal remarks on the art of modern gardening, which we intend dealing with at another time in a separate article.

— The Guaco and the Cedron. — In a paper, recently presented to the *Société d'Acclimatation*, on these two American products, M. Torres-Caïcedo, has critically investigated the marvellous virtues ascribed to these plants in the popular legends of Colombia. From the result of his studies, it appears that if the febrifugal properties of *Simaba cedron* are incontrovertible, as we have recently shown, there is considerable doubt regarding the efficacy of these plants as antidotes to the bites of venomous reptiles. Such, at least, is the opinion held by M. Torres-Caïcedo.

The *Guaco* is furnished by a Composite plant, named *Mikania Guaco*. It has been known from the most remote times by the aboriginal inhabitants of Choco, Colombia. In 1788 its reputed medical properties were revealed to Mutis, who was then engaged upon a botanical investigation of that country. A young negro called Matiz, permitted himself to be bitten by a dangerous snake, the *Taya-Echis*, having previously been inoculated in some slight skin wounds, with the *Guaco*, and he experienced no ill consequences. But we may question whether the venom of the snake had not been enfeebled by previous bites, and neutralized by sucking the wounds made, after the experiment. There seems to have been good cause to dispute the virtues claimed for this plant, as well as for many others where fiction has taken the place of fact.

Note. — *Guaco* appears to be a generic name for several plants popularly believed to possess the property of curing the bite of snakes. In English works, *Aristolochia Guaco* or *Aristolochia anguicida* is mentioned as the true *Guaco*. It is stated that so satisfied are the natives of Peru, Central America, and Mexico of its extraordinary medicinal powers and specific virtues in cases of snake bite, that every Indian or Negro, who has to traverse the country, invariably carries a supply of this plant to be prepared for any accident that may befall him throngh inadvertently placing his foot upon one of these dreaded and deadly foes of mankind. The term *Guaco* appears to be, or to have been, applied to the poisonons product of a member of the Convolvulus family in Mexico. It is a curious fact, and worthy of remark, that different species of *Aristolochia* are popularly supposed to cure the bite of snakes in the most distant parts of the world, both in Asia and America. But the appalling figures we annually receive from India of the number of persons who succumb to the bites of venomons reptiles seem to discredit the possibility of the existence of *any* effectual remedy. W. B. H.

— Importation of seeds of Xanthoceras. — The few seeds of this tree that ripened in the Museum garden of Paris, last year, would not suffice to distribute it so widely as we could wish. It is, therefore, with pleasure that we communicate the fact that the French minister in China, M. L. de Geofroy, has sent a parcel of seed collected from two large trees growing in the garden of the Legation at Tche-foo. The only thing to be feared is that, from the oily nature of the albumen the seeds will decay and lose their germinating powers during so long a transit.

— The Boldu. — For several years past there has been a great deal of talk about a plant imported under this name from Chili, and said to possess valuable healing properties in cases of diseases of the liver. Experiments to test its efficacy, undertaken at the instigation of the Chilian Government, resulted, it is said, conclusively in its favour. We call the attention of the Faculty to this intelligence.

The *Boldu* is a member of the *Monimiaceæ*, a small natural order of trees and shrubs, remarkable for their aromatic secretions. It has been variously named by different authors, *Boldoa fragrans*, Gay, being generally admitted. Jussieu called it *Boldea*, Pavon, *Ruizia fragrans*, and Persoon and Sprengel *Peumus fragrans*. It is a small, evergreen, aromat-

ic tree; branches tomentose when young; leaves oval, obtuse, coriaceous, shortly petiolate; flowers white, exhaling an agreeable perfume, arranged in terminal or occasionally axillary panicles, clothed with a whitish indumentum and provided with small, caducous bracts. The fruit consists of several-seeded, fleshy, yellowish-green, edible drupes. In its native country the bark is used for tanning, and the wood is considered the best for making charcoal.

Boldu or *Boldo* is the trivial name of this tree in Chili. According to Gay it is found in the mountainous, maritime districts of that country.

If the qualities attributed to this plant prove such as they have been described, it will speedily gain a great reputation. It is to be hoped that the seeds recently transmitted by M. Brenier de Montmorand to the *Société d'acclimatation* will lead to the means of solving the question.

— Bamboos. — In the Mediterranean region, these valuable reeds are just beginning to be appreciated according to their real worth. The time is not far distant when they may be utilized on a large scale in the manufactures. M. Auzende recently obtained plants of *Bambusa mitis*, *nigra* and *Thouarsii*, which in five months have attained quite a gigantic size, the first two exceeding 23 feet in height, and having borne without injury 14 degrees (Fahrenheit) of frost. *B. Thouarsii*, as also *B. flexuosa* succumbed to 10 degrees. From these results we cannot too strongly recommend our readers to try the cultivation of these beautiful and useful plants. — It is not so generally known as it might be that several species of this genus succeed very well in the open air in the south-west of England and Ireland. Sheltered spots should be chosen for them. *B. falcata*, (syn. *Arundinaria falcata*) is reported to be the hardiest, growing 15 to 20 feet high in favourable localities. W. B. H.

— Exhibition of Wines in London in 1874. — The permanent Universal Exhibition of London includes this year the Wines of all countries. The Committee of Organization invite all foreign and colonial manufacturers to exhibit their products as fully as possible, calling special attention to Australian wines, which are still too little known in Europe. It is desired also that specimens of the soil in which the vines are cultivated should accompany the samples, as well as information respecting the climate, ripening of the grapes, method of making and maturing of the wines, the proportion of saccharine or alcohol, duties on wines, produce per acre, etc., etc.

— Destruction of Phylloxera vastatrix. — We are requested to state that the prize of 20,000 francs (about £ 800), instituted by the French Ministry of Agriculture, has been reserved for whosoever shall be fortunate enough to discover an effectual remedy against this pest. The limit of time for competition has been extended to December 31, 1874.

— Wine of the Isabella Grape. — In December last, a member of the *Académie des Sciences* of Paris, M. Becquerel, presented a sample of the liquor made from this variety of American grape to the *Société centrale d'Agriculture*. He prepared it by crushing the berries and steeping them in brandy, afterwards filtering the juice and adding sugar. It possesses a peculiar flavour, which has given rise to the name of *Raisin cassis*, Black Currant Grape, for this variety, long cultivated on account of its ornamental foliage.

— Distribution of Awards to the successful exhibitors at the International Exhibition of Vienna. — The ceremony of formally presenting the Prize Medals, etc., gained by Belgian competitors at the Universal Exhibition of Vienna, took place at Brussels on the 8th inst., in the presence of the Royal family, Ministers of State, etc.

The only " *Diploma of Honour* „ given for Belgian Horticulture was awarded to M. J. Linden, who, in addition to this highest distinction, obtained two medals " *for Progress* „, and two medals " *for Merit* „, one of which was for the *Illustration Horticole*.

— Horticultural Exhibitions in Belgium. — The next exhibition of the *Société Royale de Flore* of Brussels, will take place on the 5, 6, and 7 of April. The *Grand Prix* is reserved for a special competition in plants with ornamental foliage.

The 21st exhibition of the *Société Royale d'Horticulture*, of Liege will take place on the 12 and 13 of April next, in the Riding school, Manège de la Fontaine, Rue Louhienne, Liege.

The Society will also organise another exhibition towards the end of June, specially devoted to floriculture, of which Roses will form the principal feature.

— Exhibitions of the Royal Botanic Society, Regent's Park. — The Shows of Plants, Flowers and Fruit are appointed for March 25, April 22, May 20, June 10 and June 24, each exhibition for one day only.

— M. Guerin-Méneville. — Although this learned man directed his studies mainly in zoological channels, he still belongs to Horticulture, on account of his works on garden entomology; and for this reason we here pay a tribute of gratitude to his memory. He was born towards the end of the last century, and was one of Cuviers pupils. From 1829 to 1838 he published the splendid work, entitled " *Iconographie du règne animal* „ of Cuvier. More recently, he produced some remarkable works on the insects of the Grape-vine, Beet-root, Olive, Cereals and various trees. To him we owe our knowledge of the Oak silk-worm, and he zealously propagated the Ailantus worm. He led a very laborious life, and he leaves the name of a scholar, whose years are counted by his valuable and scientific works.

E. A.

L'ILLUSTRATION HORTICOLE.

Etab. Chromo. de L. Stroobant à Gand

J. Linden, publ.

PL. CLIX.

ANTHURIUM FLORIBUNDUM, LINDEN & ANDRÉ.

MANY-FLOWERED ANTHURIUM.

NAT. ORD. AROIDEAE.

ETYMOLOGY: from ἄνθος, a flower, and οὐρὰ, a tail, in reference to the arrangement of the flowers on a spadix.

GENERIC CHARACTER: *Spatha* abbreviata reflexa persistens. *Spadix* subsessilis cylindricus floribus hermaphroditis obsitus. *Perigonium* tetraphyllum. *Stamina* 4 perigonii foliolis opposita, *filamentis* linearibus complanatis, *antheris* bilocularibus. *Ovula* in loculis bina collateralia ex apice axeos pendula anatropa. *Stigma* sessile oblongum. *Bacca* bilocularis di-tetra-sperma. *Semina* albuminosa inversa. *Embryo* in axi albuminis parce carnosi orthotropus, *extremitate radiculari* supera.

Herbae *americanae tropicae subacaules erectae v. scandentes*, foliis *palmatis digitatis v. saepius lobis lateralibus abortivis specie intregris;* petiolis *apice tumidis*, vaginis *stipularibus* (*in speciminibus floriferis*) *cum petiolo alternantibus persistentibus.*

Endlich. Gen. Pl. 1702.

SPECIFIC CHARACTER: *folia* in caule brevi recto haud scandente alterne inserta; *petioli* erecti vaginati supra medium attenuati graciles obscure quadranguli subalati, apice in geniculum erectum striato-sulcatum incrassati, in costam subtus prominentem producti, lamina erecta pergamenea oblique lanceolata nervis pinnatis supra haud elevatis subtus prominentibus; *scapi* plures graciles foliis breviores apice clavati; *spatha* erecta membranacea, ovato-cucullata acutissima eburnea persistens, spadicem amentaceum cylindraceum erectum album lineis nigris quadratis spiraliter pictum; *ovarium* obscure 4-5 gonum, apice peltatum mucronatum, *antherae* liberae oblongae clavatae nigro-capitatae; *baccae....?* — In Nova-Granata. — Ad vivum florentum descripsi in horto Lindeniano. — Ed. A.

Anthurium floribundum, Lind. et André.

A pretty little species, of uncommon habit in the genus to which it belongs. We have noticed it in M. Linden's establishment for the past two years, where it commenced to flower before it had scarcely any leaves. The flowers indeed form its principal attraction, in which respect it is somewhat peculiar in a family, composed chiefly of plants remarkable for their ornamental foliage or coloured spathes. It is a native of New Granada.

It bears several alternate, erect, lanceolate leaves on a short stem; petiole sheathing from the base upwards through nearly the whole of its length, the upper part attenuated, obscurely winged or quadrangular, terminating in an erect, prominently furrowed and striped articulation; midrib thick, prominent below.

Numerous slender scapes, shorter than the leaves, soon make their appearance, each supporting an upright, cucullate, acutely acuminate, ivory-white spathe, in the midst of which rises the cylindrical spadix, bearing hermaphrodite, white flowers, spirally marked with black lines. The effect of these small, though pretty flowers is very singular, and we have seen nothing resembling them in this numerous family, although it is so rich in elegant and curious forms.

The plant is easily cultivated, succeeding well in a warm greenhouse, where its flowers profusely every season. We have not yet seen the seeds, and the flowers, which we have several times examined, have always been in so young a stage that we have hesitated a long time before deciding that it should be referred to *Anthurium* rather than *Spathiphyllum*, having experienced the greatest difficulty in determining the number of stamens, the presence or absence of a perianth, and not having seen the ovary in a sufficiently advanced state to examine its cells.

E. A.

FLORICULTURE.

PRESERVATION OF CUT FLOWERS.

A chemist of Montreuil-sous-bois (Seine), M. Fremont, says that he has discovered the means of preserving cut flowers fresh for more than a fortnight. To effect this he adds a small quantity of sal-ammoniac or chlorohydrate of ammonia to the water in which the flowers are placed. It should be mixed in the proportion of three quarters of a drachm (40 grains) of sal-ammoniac to a pint of water. We shall try this plan ourselves, and we request our readers to do so likewise. It will be worth trying whether *all* flowers, including those that wither immediately after being cut, even when placed in water, will experience beneficial effects from this preservative. If so it will prove a valuable discovery.

P. E.

Chloride of sodium or commo salt, in a small quantity, possesses the same property of prolonging the freshness of cut flowers, or at least, some kinds of flowers. Probably the agency is indirect, and due to the arrest of putrefaction of the water, rather than to the supply of saline matter as food or a direct preservative.

W. B. H.

Pl. CLX.

LASIANDRA LEPIDOTA, NAUDIN.

SCALY LASIANDRA.

NAT. ORD. MELASTOMACEAE.

ETYMOLOGY: from λασιος, woolly and ανηρ, ανδρος, a male, a stamen, — woolly stamens.

GENERIC CHARACTER: *calyx* tubo subcampanulato, libero, limbi quinquepartiti lobis angustis, acuminatis. *Corollae* petala 5, calycis fauci inserta, ejusdem lobis alterna, obovata. *Stamina* 10, cum petalis inserta; *filamentā* glabra v. saepius pilosa, antherae elongatae, breviter rostratae, uniporosae, connectivo basi intus varie biauriculato. *Ovarium* basi calyci subadhaerens, superne liberum, setis coronatum, quinqueloculare, loculis multiovulatis. *Stylus* filiformis; *stigma* punctiforme. *Capsula* intra calycem libera v. leviter adnata, quinquelocularis, apice loculicide quinquerimosa. *Semina* plurima, reniformi-oblonga, punctata, umbilico basilari. — *Arbores v. saepius frutices, in America tropica crescentes, plus minus setosi v. strigosi, ligno molli, fragili; ramis tetragonis, foliis oppositis v. verticillatis, integerrimis, 3-5 nerviis, floribus terminalibus, paniculatis, speciosis, violaceis, roseis, rubris v. puniceis, singulis ante anthesim bractearum convexarum pari mox deciduo inclusis.*

Lasiandra, DC., *Prodr.*, II, 127.

SPECIFIC CHARACTER: frutescens, erecta; *caules* subteretes superne ramosi lepidoto-strigillosi; *folia* ovata acuta integerrima 5-nervia, 3-5 cent. longa, 2-3 lata, utraque pagina sed superiore praesertim dense-strigilloso-setosa, nervis subtus setoso-lepidotis, petiolo subcentimetrali; *flores* ad apices ramulorum glomerati, bractea quadruplici basi fulcrati; *calyx* setis lepidotis dense vestitus, dentibus tubi oblongi duplo brevioribus triangularibus acutis; *petala* late obovato-subemarginata ciliata, 2-3 cent. longa et lata, vivide purpurea unguiculo albo; *stamina* subconformia connectivo ad insertionem filamenti barbato, pilis in fasciculos duos nonnihil divisis, filamento medium versus pilis aliquot divaricatis ornato; stylus glaberrimus. — Crescit in Peruvia (Moyobamba), in Nova-Granata (Quetame, Susamuco, prope Rio-Negro Antioquiarum) et in Brasilia (Goyaz). — Charact. pro maxima parte e clar. Naudinii descriptione, partim ad plantam vivam in horto Lindeniano desumptis. — ED. A.

Lasiandra lepidota, Naudin, *Melastom*, p. 155.

— **barbigera**, Naud., ibid. (fide Triana).

Pleroma barbigerum, var. **lepidotum**, Triana, in *Trans. of the Linn. Soc. Lond.*, XXVIII, p. 45.

This plant was sent to M. Linden in 1867, from the province of Antioquia, New Granada; and the first part of the description was taken from living plants in 1871. It inhabits the cold regions of the Cordillera of the Andes. Isolated specimens were found by M. Linden even in the most exposed parts of the terrible Paramos (snow plains) of Zumbador and Almorzadero in the province of Pampluna, Santander, where men and horses perish in the fearful tornados which lay this country waste. Under the influence of these dreadful storms, the bark of this shrub is torn away in long strips, hence the native name of *siete cueros* or seven skins. We hesitated at first to unite it with the *Lasiandra lepidota* of Naudin, and the more so as the extremely fugacious flowers did not reach us in a satisfactory state for examination. But after comparing it with the other species described and reviewed by M. Triana in his admirable monograph of the *Melastomaceae*, we are unable to connect it with any other type, and consequently we shall retain the present name for it so long as we have no proof that our identification is erroneous. We give the description that we made of this plant in 1871, at least in part, with the addition of the flowers as represented in the portrait:

A bushy shrub, with numerous slender branches; bark of a reddish brown intermingled with white on the older branches, and separating longitudinally; young branches terete or obscurely tetragonal, with a green ground, clothed with small, bright red, truncate scales, appressed at the base, erect and acute on the margin of the petiole and leaf and on the nerves of the under surface of the leaf; petiole about 5 lines long, flattened above; blade of the leaf ovate, acuminate entire, apex recurved, with 3 parallel, depressed yellowish nerves, the lateral confluent and about 2 lines from the margin. The colour of the leaf is a beautiful, deep green on which the closely appressed hairs are distinguishable, giving the surface the appearance of a cat's tongue. The under surface is paler, covered with light brown scales, and the whitish nerves very much elevated. The small bracts between the petioles are erect and acute.

Flowers about 2 inches in diameter, of the most beautiful, bright carmine red, changing to white towards the base of the petals. Calyx caducous, and not observed by us; corolla composed of 5, obovate, flat petals. The stamens with white filaments, and very long, yellow, recurved anthers.

Now that this handsome plant has produced flowers it will be propagated and distributed. We are all the more pleased with it, because its natural habitat, at a considerable altitude, indicates that it will flourish in a cool house; and plants of this Order are far too rare in cultivation. E. A.

160

L'Illustration Horticole.

Etab. Chromo. de L. Stroobant à Gand.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, pu.

PL. CLXI.

PRITCHARDIA PACIFICA, SEEMANN.

PACIFIC ISLANDS PRITCHARDIA.

NAT. ORD. PALMACEAE.

ETYMOLOGY: Dedicated by Berthold Seemann to W. Pritchard, author of « *Polynesian Reminiscenses* », and traveller in Oceania.

GENERIC CHARACTER: *Flores* hermaphroditi, sessiles. *Spathae* ∞, cylindricae subcompletae. *Perigonium* exterius campanulatum, 3-denticulatum, interius 3-phyllum, phyllis basi truncato-cordatis cum staminum cylindro connatis, deciduis, praefloratione valvata. *Stamina* 6 subaequalia, filamentis in tubum brevem connatis, antice liberis lanceolatisque, antheris oblongo-lanceolatis dorso affixis. *Ovarium* triloculare, ovulis basi affixis. *Styli* apicales, uniti. *Drupa* baccaeformis, 1-cocca, endocarpio tenui. *Albumen* aequabile, per chalazam et raphem in latere ventrali laevissime impressum. Embryo dorsale, paululum supra basim positum. — *Arbores erectae, inermes, frondibus flabelliformibus, palmatisectis, petiolis inermibus, spadicibus lateralibus, longe pedunculatis, paniculato-duplicato vel triplicato-ramosis.* (SEEMANN, *Flora vitiensis*, p. 273.)

SPECIFIC CHARACTER: frondium segmenta circa 90; baccae magnitudine fructus *Pruni spinosae*.

Pritchardia pacifica, Seemann et H. Wendland, in *Bonplandia*, v. IX (1861), p. 260, et v. X (1862), pp. 157, 310, t. 15 — Seem., *Flor. vit.*, p. 273.

Up to the present time, there are three known, described species of this magnificent genus of Palms, namely: *P. pacifica*, Seem. and Wendl., *P. Martii*, Wendl., and *P. Gaudichaudii*, Wendl., to which may be added, *P. filifera*, exhibited at Ghent, in 1873, by M. Linden. And perhaps also a fifth species, recently received from the Sandwich Islands, but of which the young, living plants are yet insufficiently developed for examination. *Pritchardia pacifica* was discovered by the late Berthold Seemann in the Fiji or Viti Islands, and elsewhere in Polynesia. It is one of the handsomest Palms in existence, not so much on account of great stature as of beauty in form. It belongs to the class so much sought after in England termed Fan Palms, from the shape of their leaves.

Its trunk reaches a height of about 30 to 35 feet, with a diameter of 1 foot. It is straight and even throughout, devoid of spines, and bearing at its summit a magnificent, regularly globular crown of some twenty large leaves, supported on spineless petioles, 3 to 4 feet long, and clothed with a brown fibre at the base. The blade of the leaf is rounded at the base, when young covered with a dirty-white down, and eventually forming a fan 5 feet broad by 4 feet long. From the axils of the leaves proceed the somewhat fragile spathes, which soon split to pieces and fall off. The inflorescence never appears below the base of the crown. The spadix is about 3 feet long, solid and straight, bearing numerous hermaphrodite flowers, of a yellowish brown hue, succeeded by fleshy drupes, about half an inch in diameter, resembling the sloe in colour, or, as has been stated, exactly like the black heart cherry. The pulp of the mesocarp is of an astringent taste.

Seeds were imported into Europe and Australia by Seemann, and they germinate very freely, so that the plant is already beginning to spread.

The natives of Polynesia call this tree *Viu* or *Sakiki* or *Viu Masei* and in Tonga Island *Biu*. They make very choice fans, under, the name of *ai viu* or *iri masei* from the leaves, which only the chiefs or persons of distinction are allowed to use. A similar custom is observed in Ceylon, where the leaves of the Talipot Palm *(Corypha umbraculifera)*, are employed for the same purposes. The general community content themselves with fans and parasols made from *Pandanus caricosus*. The fans of *Pritchardia* are from 2 to 3 feet in diameter, the border surrounded by a flexible reed. It is also used as an umbrella and sunshade, and the wood of this tree is employed in building.

The Palm spoken of by Forster as *Corypha umbraculifera* is probably *Pritchardia pacifica*, and there is no doubt, says Seemann, that the plant found by Bennet, under the name of *Vahana*, in the Marquesas Islands, is the same. Bennet adds that it grows in Timor also, where they make *Toddy* of it, but in this case he probably confounds it with *Corypha umbraculifera* of Linnæus.

It is a rather remarkable fact that the leaves of this Palm are an exclusive badge of nobility throughout the Polynesian Islands, the lower orders being permitted to use only those of an allied species.

As ornamental plants the species of *Pritchardia* occupy a foremost position. Very soon they will be widely dispersed, for recent importations of seeds have enabled us to see a fine lot of specimens in M. Linden's Establishment.

The beautiful *P. filifera*, excited universal admiration last year at the International Exhibition of Ghent. Its elegant, erect leaves, resembling huge fans, bordered with a fine fringe of silvery threads, give this species a graceful habit peculiarly its own.

Should it turn out as conjectured, that the Palm previously mentioned as coming from the Sandwich Islands, is a new species of *Pritchardia*, this genus will be nobly represented in our conservatories.

E. A.

FLORICULTURE.

DOUBLE-FLOWERED CINERARIAS.

Several varieties of double-flowered Cinerarias have been brought out by Messrs Haage and Schmidt of Erfurt, under the name of *Cineraria hybrida flore pleno.*

This is quite a novelty in floriculture. We already possessed numerous strains of these beautiful plants, remarkable for the size and brilliancy of their many-tinted flowers; but until 1861, when Mr. Kendall of Stoke Newington, exhibited a double-flowered variety in London, called *Cineraria rosea plena*, to which a commendation was awarded, a double, or rather full-flowered variety was unknown. Mr. T. Moore, co-editor of the *Gardener's Chronicle*, describes it as a very pretty, compact-growing, double-flowered variety, with the flower heads of a magenta-rose colour. He adds: whether that was lost or not, or did not perpetuate itself, we do not know; but it was no seen again in public, nor has adouble-flowered Cineraria appeared since that time, so far as we are aware, until those in question. The plant figured, raised by Messrs. Haage and Schmidt, about six years ago, has been very closely observed, but it had varied but little up till that time. It was therefore a piece of good fortune to obtain varieties of various colours, whilst at the same time preserving the doubleness; and this is what the above-named gentlemen have succeeded in doing.

Henceforward, the Cinerarias of our conservatories will be enriched like the Zonale Pelargoniums, by a host of doubleflowered varieties, forming one more attraction in our floricultural displays.

D.

KITCHEN GARDEN AND ORCHARD.

DURATION OF THE GERMINATIVE POWER OF SEEDS.

A short, though very instructive article recently appeared in the *Revue Horticole*. It is a list of culinary plants, giving the duration of the germinative power of seeds commonly used. A good many amateurs of limited practical experience, who save their own seeds, are in doubt whether to keep or cast away certain sorts after they are twelvemonths old. It would be doing good service to lay the information before them. The list in question, signed X., is evidently the work of a practical man. His indications are not absolute. Some species, indeed, exceed the limit given for them, but in general it may be followed with advantage, and we particularly recommend it to the notice of our readers.

	Duration years.
Artichoke, *Cynara scolymus.*	5
Asparagus, *Asparagus officinalis*	4
Basil, *Ocymum Basilicum*	6
Batatas, *Convolvulus batatas.*	2
Beet-leaf, *Beta vulgaris*	5
Beet-root, *Beta vulgaris*	5
Burnet, *Poterium sanguisorba*	2
Cabbage, *Brassica oleracea*	5
Capsicum, *Solanum capsicum*	4
Cardoon, *Cynara Carduncutus*	7
Carrot, *Daucus carota*	4
Cauliflower, *Brassica oler. botrytes*	5
Celery, *Apium graveolens.*	7
Celeriac, „ „	7
Chervil, *Scandix cerefolium*	2
„ bulbous, *Chaerophyllum bulbosum.*	2
Chicory, *Cichorium intybus*	8
Chive, *Allium fistulosum.*	2
Corn salad, *Valerianella olitoria*	4
Cress, Common, *Lepidium sativum*	5
Cress Water, *Nasturtium officinale*	4
„ perennial, *Erysimum praecox*	3
Cucumber, *Cucumis sativus*	5
Dandelion, *Taraxacum officinale*	1
Egg-plant, *Solanum melongena.*	7
Endive, *Cichorium endivia*	8
Fennel, *Foeniculum officinale*	6
Gourds, *Cucurbita pepo, maxima* and *moschata*	5
House-bean, *Faba satira*	6
Kidney Beans, *Phaseolus* var.	2-3
Kohl-Rabi, *Brassica caula rapa*	5

	Duration years.
Leek, *Allium porrum*	2
Lettuce, *Lactuca sativa*	5
Maize, *Zea mais*	2
Melon, *Cucumis melo*	5
Mustard, *Sinapis alba*	5
Nasturtion, *Tropaeolum majus*	5
Onion, *Allium cepa*	2-3
Orach, *Atriplex hortensis*	1
Parsnip, *Pastinaca sativa*	1
Pea, *Pisum sativum*	4-5
Potato, *Solanum tuberosum*	3
Purslane, *Portulaca oleracea*	8
Radish, *Raphanus sativus*	5
Rampion, *Campanula rapunculus*	5
Rhubarb, *Rheum*	3
Salsify, *Tragopogon porrifolius*	2
Savory, *Satureia hortensis*	3
Scorzonera, *Scorzonera Hispanica*	2
Sea-Kale, *Crambe maritimum*	3
Sorrel, *Rumex acetosa*	2
Spinach, *Spinacia oleracea*	5
Spinach, New-Zealand, *Tetragonia expansa*	5
Strawberry, *Fragaria* var.	8
Thyme, *Thymus vulgaris*	2-3
Tomato, *Solanum lycopersicum*	5
Yam, Chinese, *Dioscorea Batatas*	2

TROPICAL FRUIT AND ECONOMIC TREES.

Gardens and herbariums generally, both in the large establishments and private collections, are lamentably deficient in one important particular. We meet with a very limited number of tropical plants in cultivation, that are interesting from their uses as food or in the manufactures or arts. Travellers in distant countries almost invariably omit to collect specimens, either living or dried, of those plants cultivated for their produce. Their chief object is to collect plants possessing the merit of novelty. We daily consume articles, of whose origin we are utterly ignorant; and yet would there not be a solid advantage in knowing their source? From an instructive point of view, as well as for their ornamental attractions, many of these economic plants might worthily occupy a place in our hot-houses. The Coffee tree, for instance, forms a delightful foliage-plant, and the same may be said of the trees furnishing Camphor and Cinnamon, whilst a tuft of sugarcane in the corner of a house is never out of place. The importance of collections of economic plants was recognised by the jury of the Exhibition of 1867; and they deservedly rewarded those who brought the best lots together, amongst whom M. Linden took the lead. With a view of drawing attention to these exotic plants, to which we are indebted for so many benefits and luxuries, we propose publishing a series of articles, in which we shall give a concise account of their history and applications, commencing to day by the Bread fruit-tree (*Artocarpus incisa*).

J. F.

The Bread-fruit Tree, *Artocarpus incisa*, Lin.

I. THE BREAD-FRUIT TREE.

The Bread-fruit tree, *Artocarpus incisa*, Lin., forms the type of a small natural order, termed the *Artocarpeae* (¹). The genus *Artocarpus* comprises about fifteen well-defined species, and several still insufficiently known. But *A. incisa* is the most important of all, and is of great interest on account of its history as a useful plant. *A. integrifolia*, the Jack-fruit, is another species possessing some valuable qualities, though its reputation by no means equals that of the former.

The Bread-fruit tree has a stout trunk from 40 to 60 feet high with thick branches, hairy when young, and abounding with a milky juice in all its parts. Leaves alternate, petiolate, penninerved and lobed, from eighteen inches to two feet long, when young subtended by large convolute stipules, which are pushed off by the growing leaves. The capitate female inflorescence is formed in the axils of the upper leaves; it is roundish in shape and about half as large as the fist, the surface covered with excrescences, each surmounted by two stigmas. The naked flowers are developed in a centrifugal manner, consisting of a single ovary, which is reduced by abortion to a single 1-seeded cell with a lateral style. After the flowering period, the ova-

(¹) Trécul, *Artocarp.*, Ann. Sc. Nat., s. III, vol. VIII.

ries are inclosed in separate, fleshy pits, formed by the arrested branch or receptacle of the inflorescence [1], formerly supposed to be composed of consolidated fleshy perianths. The male flowers are borne in long, cylindrical catkins, usually on the same branch, though from the axils of other leaves. This catkin is composed exclusively of monandrous flowers, having a two-leaved perianth. It is the receptacle of the inflorescence, as mentioned above, which, when ripe, is as large as a child's head. The fruits are completely immersed in a semi-fleshy mass, and the seeds attain the size of a chestnut; they are formed of two large cotyledons without albumen. The earliest account of the Bread-fruit tree is by captain Dampier, the circumnavigator, in 1688. He says : « the Bread-fruit, as we call it, grows on a large tree, as big and as high as our largest apple trees. It hath a spreading head full of branches and dark leaves. The fruit groweth on the branches like apples. It is as big as a penny loaf, when wheat is at 5 shillings the bushel. It is of a round shape, and hath a thick, tough rind. When the fruit is ripe, it is yellow and soft, and the taste is sweet and pleasant. The natives of Guam use it for bread. They gather it when full grown, while it is green and hard. Then they bake it in an oven which scorcheth the rind and maketh it black. But they scrape of the outside black crust, and there remains a tender, thin crust, and the inside is soft, tender and white, like the crumb of a loaf. There is neither seed nor stone, but it is all of a pure substance like bread. It must be eaten new, for if it be kept above twenty-four hours it groweth harsh and choky; but it is very pleasant before it is too stale, etc., etc. »

There are two varieties of the Bread-fruit tree, the one with fertile the other with sterile fruits. The first is found more especially in the West-Indies, and has been introduced into America. Its compound fruit is distinguished from the barren variety by the bristly protuberances corresponding to the separate ovaries. For this reason, M. Bélanger thought good to name it, *A. seminifera.* This variety is used for the farinaceous matter of its receptacle: and its seeds are eaten roasted. But the seedless variety is much more sought after, and, if we can rely upon Dampier, it is indigenous to the Malayan Islands. At all events, it is the only one that is widely grown in Oceania. The abortion of the seeds permits of a greater development of the amylaceous substance, which is in the following proportion, according to an analysis by M. Cuzent [2].

Raspings of the rind	4.00
Woody Tissue	22.22
Fecula	17.00
Loss	66.78
	100.00

A preserve is made by cutting the fruits in slices and drying them in an oven. In fact, this fruit can only be eaten cooked, and the natives eat it with fruit, sweet Potatoes, or fish, much as we do sliced bread, with butter. To conclude, we may add that the pressed, fermented dough is called *Popoï.*

In the Marquesas Islands, Gambier Islands and neighbouring groups the consumption of this fruit is very considerable. In the Gambier Islands enormous quantities are preserved in *silos* to keep up the supply until the succeeding harvest.

The fertile variety of this tree is propagated from seeds, and also very easily from suckers, which is the only method for the seedless variety. The trees commence bearing fruit when six years old. In Otaheite this tree is named *Uru* and *Maïore,* and in other islands it is called *Rima.* M. Cuzent enumerates 15 or 20 sorts of Bread-fruit cultivated in Otaheite under different names and possessing dissimilar qualities. The average weight of each fruit is from two to three pounds. The heaviest seen by M. Cuzent weighed twelve pounds.

The milky juice of the Bread-fruit tree is similar in composition to caoutchouc, and may be used for some of the same purposes. By making incisions in the branches it is obtained in large quantities. It dissolves in terebinthine, and the chemist referred to above, made a water-proof varnish from it, " which, applied hot to fabrics renders them impervious. „ The native women use it, associated with perfumes, in dressing their hair. The soft, homogeneous wood is used for various purposes, and the hollowed trunks serve for canoes.

Another product of this valuable tree is the thick fibrous fibre or inner bark, which is separated from the outer by beating and maceration, and furnishes a natural fabric used by the natives as an article of clothing. But civilisation and its consequences abolish a multitude of customs and usages dear to the naturalist and ethnologist. J. F.

[1] Baillon, *Adansonia,* vol. IV.

[2] O' Taïti, p. 181.

HORTICULTURAL CHRONICLE.

March, 1874.

— Exhibition of Fruits at Ghent, and distribution of Prize Medals. — A splendid show of fruits took place on the 21st of last September, at the Casino, Ghent, which was afterwards removed, under the auspices of the *Cercle d'Arboriculture de Belgique,* to Vienna, where it deservedly gained one of the grand prizes of the Universal Exhibition.

The distribution of the prizes took place in the Hôtel-de-Ville of Ghent on the 21st of December last, in the presence of a numerous and select company, presided over by M. de Ghellinck de Walle, who was assisted by the provincial and municipal authorities. The gathering was brilliant, and the pomological resources of Belgium showed up to great advantage under the skilful and intelligent direction of active and industrious men.

— Dr Hooker, President of the Royal Society of London for the promotion of Natural Science. — The learned Director of the Royal Botanic Gardens, Kew, one of the botanical glories of the present day, has recently been appointed to this important post. In honouring him, the Society has equally honoured itself, and given the best answer to the vexatious Ayrtonian intermeddlings of the past year.

Dr Hooker has also accepted the Chairmanship of the Royal Horticultural Society's scientific Committee.

— Expedition in Cyrenaica. — The exploration of this country, under the auspices and at the expense of the Khedive of Egypt, has commenced under the direction of Mr G. Rohlfs. Dr Ascherson of Berlin has been specially attached as botanist to the expedition.

— Scientific Exploration of Paraguay. — The Paraguayan Government has formed a Scientific Commission in Europe, which has just started for the purpose of two years investigation of Paraguay. It is composed of Messrs. Thwite, geologist and mineralogist, Keith Johnston, geographer and Balansa, naturalist. The latter is already well-known from his discoveries in Asia Minor, the Atlas and New Caledonia.

— M. Bureau, Professor at the Museum of Paris. — We learn from the *Journal officiel* of 31st January, that Dr E. Bureau has been nominated Professor of Botany at the *Museum* of Paris. All those who are acquainted with his admirable works on the *Bignoniaceae* and *Artocarpeae* will approve of his elevation to this important post. The new Professor will revive the ancient Chair of Rural Botany, according to a new programme.

— The Candollean Quinquennial Prize. — This prize of 500 francs, about twenty pounds, founded by A. P. De Candolle for the best monograph of a genus or family of plants, will be awarded this year by the *Société de Physique et d'Histoire Naturelle de Genève*. The memoirs must be written either in Latin, French, German, English or Italian, and addressed to M. Alph. De Candolle, Geneva, before next September.

— L'Empire du Brésil a l'Exposition de Vienne. — Under this title a work has recently appeared at Rio Janeiro replete with interesting information respecting the products of that vast empire. It is well known with what enlightened care the Emperor Don Pedro patronizes and directs the progress of all branches of human enterprise in his country. A striking example of this interest is furnished by his visit to Europe, two years ago. And a careful examination of the book before us is the best proof of an onward movement which increases day by day. We shall probably have occasion to make extracts from it.

Agriculture, especially, is the object of every species of encouragement. The mighty forests which cover the greater part of the empire, leave but a very small proportion to civilization of between three and four million square miles of territory, that might support ten times as large a population as the present, which does not equal two to the square mile. Almost all kinds of useful plants would grow on the clearings that might be effected at different altitudes and in all sorts of climates.

Let us quote a few statistics :

The cultivation of Cotton already extends over a very large area. One hectare (nearly two acres and a half) will take 4545 plants, and produce yearly about 4750 pounds weight of cotton. A single labourer will manage 3 hectares, and if cereals are grown between the cotton plants, he may obtain a gross return of £ 93, calculating the cotton at threepence halfpenny per pound.

Coffee is another profitable article to grow. 918 plants to the hectare (two acres and a half), produce from 1485 to 4400 pounds. One man is sufficient for two hectares, and the return, reckoned, at a fraction over threepence three-farthings (3.849 d.) per pound would be from about £ 45 to £ 137.

The Sugar-Cane yields from 220,000 to 264,000 pounds per hectare in 5 months; and one man can realise from 2 hectares a profit of about £ 160.

The Vine is increasing its area almost daily in the provinces of S. Paul, Rio-Grande do Sul, and in the neighbourhood of Rio.

In 1872, nearly 70,500 gallons of wine was made, realising from three and sixpence to ten and sixpence per gallon. And a thousand vines will yield about 880 gallons, equal to a money value of from £ 36 to £ 84.

Tapioca, the produce of the root of *Manihot utilissima*, is cultivated everywhere, even in the poorest soils. In the province of Rio Janeiro they plant it at the rate of 4000 to the acre, yielding about 26,500 pounds per acre, which realises £ 165 12 s. 6 d. at the rate of three halfpence per pound.

The Potato, Wheat, Maize, Rye, and Rice, yield proportionately large crops.

All parts of this veritable land of milk and honey demand colonisation. When, then, will honest industrious Europeans have the courage to open this inexhaustible mine of wealth, a hundred times more trustworthy and profitable than all the gold diggings of Australia and California?

E. A.

PL. CLXII.

EPIDENDRUM CATILLUS, RCHB. F. & WARSC.

NAT. ORD. ORCHIDACEAE.

ETYMOLOGY: from ἐπί, upon, and δένδρον a tree, growing on trees (epiphytal).

GENERIC CHARACTER: Vide Endlicher *Genera plantarum* 1371.

SPECIFIC CHARACTER: *Epid. cochlidio* et *Epid. elongato* affinis, sed *pedunculi* laterales graciliores elongati, crassi, nitidi, quasi calamarii; *bracteae* lanceolatae acuminatae ovariis pedicellatis multo breviores; *sepala petalaque* cuneato obtuse acuta, miniata, extus glaucescentia, petala latiora; *labellum* miniatum, laciniis lateralibus semicordato-oblongis serrulatis retrorsis, lacinia antica anguste triangula obtusa, callo flavo magno oblongo acuto utrinque unidentato disco utrinque unipapulato postice obtecto; *androclinium* serratum. — In Cordillera occidentalis Novae-Granatae leg. Warscewicz, Roezl. — In horto Lind. Bruxel. introd. — Vidi viv. flor. — (Charact. e prof. Rchb. descr. desumptis). — ED. A.

Epidendrum Catillus, Rchb. f. et Warscew. — *Bonpl.* ii, 12. — Walp. *Ann.* VI, 393. — *Gard. Chron.* 1873, p. 1398.
— imperator, Linden.

We saw this species in bloom in December last, at M. Linden's, Ghent, who introduced it in Europe, some years ago. It is a very rare plant, originally discovered by Warscewicz on the western Cordillera of the Andes of New Granada, and much more recently by Roezl and Wallis in the same region. This species has also flowered with M. Day, and with Mr Denning, gardener to Lord Londesborough, from plants sent to England by M. Linden, and it received a First class certificate at the last Meeting of the Royal Horticultural Society of London.

According to Prof. Reichenbach it is closely allied to *E. cochlidium* of Lindley and *E. elongatum* of Jacquin, but differs from them in the more decidedly cinnabar red of its flowers and in the sepals being glaucous on the outside. It is a pretty plant, whose flowers are of a colour rarely seen in the genus, with the exception of *E. cinnabarinum* of Salz. *(Schomburgkii, Lindl.)* The flowers we saw last Autumn at M. Linden's were arranged in a close, erect panicle, and very effective, especially from their brilliant colouring. M. Linden keeps it in a greenhouse, where it is subjected to the same treatment as the majority of cool-house orchids. We have seen it growing and flowering well under conditions similar to those in which *E. paniculatum* and allied species will flourish.

E. A.

THE CARNA-UBA OR WAX-PALM OF BRAZIL.

A volume published last year, entitled " *le Brésil à l'Exposition universelle de Vienne* ", contains some valuable information worth reproducing, concerning this notable Wax-Palm, which is of the same importance for Brazil as the *Ceroxylon andicola* is for the Indians of Quindiu.

A few short extracts will show to what an infinity of uses the different parts of this beautiful tree, (*Copernicia cerifera* of Martius) may be applied.

It grows wild in the provinces of Ceara, Rio Grande do Norte, and others of the same region. Its roots serve as a substitute for Sarsaparilla. Its trunk furnishes a valuable timber for building, and it is also used in the manufacture of musical instruments, piping, pumps, railings, etc. The fibre of the trunk makes a strong, glossy cordage. The *cabbage*, or crown of undeveloped leaves, is an excellent vegetable. It also produces wine, vinegar, sugar and a kind of sago, eaten by the natives in times of drought. The fibre of the stem and leaves supplies the place of cork. The fruit is edible, its pulp possessing an agreeable flavour, and the albumen of the seed is torrefied like coffee. Another product of the stem is a beverage, similar to that obtained from the cocos of Bahia; its also yields a kind of starch of the nature of the *Maizena*. Plaited hats, baskets and brooms are manufactured from the leaves, for home use and exportation, to the annual value of 70,800 pounds sterling. But the principal article of value produced by this tree is the wax obtained from the leaves, and employed in the manufacture of candles, chiefly for the province of Ceara. The quantity of this substance yearly exported is estimated at about 867 tons with a home consumption of about 722 tons, representing a total value of perhaps more than 100,000 pounds sterling.

It will be perceived that there are few plants, even amongst those most valuable to mankind, that could bear comparison with the Carna-uba Palm, which should be placed in the category of " universal trees " so much spoken of by many travellers. (1)

I. NOETZLI.

(1) We may be permitted to append a few further notes to the foregoing interesting article after Seemann and others.

The genus *Copernicia,* instituted by Martius in honour of the great astronomer, Copernicus, comprises half a dozen tropical American species. They are trees of medium size, destitude of spines, and presenting a peculiar appearance from the remains of the withered leaves attached to the trunk. The small, greenish flowers are borne in large panicles, issuing from the axils of the leaves, and are succeeded by yellowish elliptical drupes. *C. cerifera* of the north of Brazil occurs as isolated individuals, and occasionally in immense forests, growing to a height of 45 to 60 feet. At the adult stage its crown is perfectly spherical, and its palmate leaves are glaucescent like those of *Chamaerops humilis*, L. Besides the applications mentioned above, we may add that the Brazilians fodder their cattle with the leaves in times of dearth. They also call it *Arruda da Camara.* The wax is collected from the young leaves, after they are detached from the tree, by shaking and beating them together, each leaf furnishing about an ounce, which is melted down by fire. For use it is mixed with beeswax. Large quantities are annually imported into Portugal aud especially into England. The difficulty has been to bleach it as it retains the yellow colour after manufacture, as conducted by Price's Candle Company at Vauxhall. Whether a method of effecting this has yet been discovered we are not aware. The wood is also occasionally exported to England, where it is used for veneering.

The other described species are: *C. hospita*, Mart., Colombia; *C. peumos*, Mart., Mexico; *C. maritima*, Mart., and *C. miraguana*, Mart., Cuba; and *C. tectorum*, Colombia, all handsome trees and useful in some way or other.

E. A.

L'ILLUSTRATION HORTICOLE.

J. Linden publ.

Etab. Chromo. de L. Stroobant à Gand.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

Pl. CLXIII.

DRACAENA (CORDYLINE) BELLULA, LINDEN & ANDRÉ.

GEM DRACAENA.

NAT. ORD. **ASPARAGINEAE.**

ETYMOLOGY: from δράκαινα or she-dragon, in allusion to the exudation from wounds resembling the resinous Dragon's-blood of *Calamus Draco*, etc.

Cordyline is from κορδύλη a club, Club-Palm.

GENERIC CHARACTER: Vide Endlicher, *Genera plantarum*, 1166.

SPECIFIC CHARACTER: erecta, elegans, gracilis habitu; *folia* permulta petiolis cylindraceis canaliculatis basi convolutis tumido nodosis atroviolaceis lamina 15-20 cent. longa, 1-2 cent. lata, lineari-lanceolata acuta purpureo-violacea lineis gracillibus sparsis viridi-cupreatis longitudinaliter percusa, vivide-rubro-marginata. — Ex insulis Oceani australis in Europam allata, 1872. — Ad viv. desc. in h. Lind. — E. A.

Dracaena bellula, Linden et André.

We have watched the progress of this delightful little species with the greatest interest ever since its first appearance in M. Linden's establishment, in 1872. It was received from the South Sea Islands. Its graceful outline and peculiar colouring were gradually developed. At the present time we may term it the gem of the genus, a perfect *King Charles* amongst its kindred. (¹) Its numerous, pretty, linear-lanceolate leaves, clustered and regularly erected, are of a purple-violet, longitudinally striped with slender graygish green lines, and edged with bright red, and from 6 to 8 inches long by 6 to 9 lines broad. We predict a great success for it amongst the lovers of dainty little plants, and wait to see whether it will not be preferred to some of the more highly ornamental forms. We may add that it requires the same treatment as all the other species with variegated foliage, and should it increase a little in size under different conditions, it will never, we believe, attain much larger dimensions. E. A.

(¹) Indeed, the small African species which form a distinct section, characterized by their linear, short, stiff leaves, devoid of any particular elegance, no longer represent the pigmies of the genus in our gardens. *Dracaena bellula* is a miniature form of the large species, or varieties, having their leaves broadened like the blade of an oar. It has all the grace of the most beautiful forms in the genus. We might compare it to a Liliputian *D. stricta*, without its bright colours, which are here replaced by a dark greenish purple, covering the entire plant with a dull glaze. In this tiny plant, we have a vigorous, healthy appearance associated with its prettiness.

MISCELLANEOUS.

Cultivation of Eucalyptus. — Now that the cultivation of *Eucalyptus globulus* and other species has become so general in the Mediterranean and other warm-temperate regions, we may be excused for giving the mode of procedure, practised by the Australians. For, although impracticable in England beyond temporary ornamental purposes, it might be profitably pursued in many of her dependencies. We borrow the following notes from an extract from the " *Australasian* „ in the *Bulletin de la Société d'Acclimatation* 1872, by M. Raveret-Wattel.

" The soil is ploughed in winter to a depth of about four inches and a half, and the furrows left undisturbed. At the end of July or in August, or even the beginning of September, according to convenience, it is harrowed in the direction of the furrows so as not to destroy the ridges, and the seed sown at once, at the rate of about two ounces to the acre. The natural crumbling down of the earth, or the first shower, is quite sufficient to cover the seed. During the Summer the plants will make enough growth to overcome all the weeds that may spring up with them; but it is absolutely necessary to prevent all kinds of animals from browsing upon them. However, after the expiration of the second year, the *Eucalyptus* has nothing to fear from sheep, and they may be permitted to graze in the plantations without fear of injury.

Experience has shown that this tree succeeds better when sown the same year that the ground is ploughed, and especially if animals have previously been pastured on the site of the future plantation, in order to cleanse it as much as possible from foreign seed, and thus prevent the too great intrusion of weeds during the first year. The Blue Gum, *Eucalyptus globulus*, grows rapidly in the poorest soils, provided the drainage is good. „

— Botanical Libraries in Belgium. — We have lately received from M. Cogniaux of the Botanic Gardens, Brussels, a reprint of an article on this interesting subject, read by him last July, at a meeting of the Royal Botanical Society of Belgium. The author complains of the poverty in Botanical works of the libraries accessible to botanists, and shows that in this respect the country by no means maintains the eminence in Horticulture and Botany it can otherwise lay claim to. Neither the Royal Library, the State Botanic Garden, the Royal Museum, nor either of the various societies possesses a library worthy of the modern literary victories in the science of plants. A few private collections, such as those of Morren, Van Heurck, and Du Mortier, for instance, are celebrated for their richness, but they are neither complete nor open to all Belgian botanists, hence their labours are very much fettered.

We cordially support M. Cogniaux, in the hope that this state of things will not last much longer.

E. A.

PL. CLXIV.

APHELANDRA FASCINATOR, LINDEN & ANDRÉ.

THE CHARMER APHELANDRA.

NAT. ORD. **ACANTHACEAE.**

ETYMOLOGY: from ἀφελής, simple or single, and ανηρ a man, in allusion to the 1-celled anthers of this genus.

GENERIC CHARACTER: *calyx* quinquepartitus, inaequalis. *Corolla* hypogyna, ringens, labio superiore subfornicato, bidentato, inferioris tripartiti laciniis lateralibus multo minoribus. *Stamina* 4, corollae tubo inserta, inclusa, didynama; antherae uniloculares, muticae. *Ovarium* biloculare, loculis biovulatis. *Stylus* simplex; *stigma* bifidum. *Capsula* teretiuscula, bilocularis, tetrasperma, loculicide bivalvis, valvis medio septiferis. *Semina* compressa, retinaculis subtensa. — *Frutices Americae tropicae*, *foliis oppositis*, *spicis axillaribus et terminalibus tetragonis*, *bracteis oppositis*, *submembranaceis*, *bracteolis angustis*, *corollis speciosis*, *rubicundis* (*aut aurantiacis*) (Ex Endlich *Gen. Pl.* 4074.)

Aphelandra, Rob. Brown, *Prodr.* 475.

SPECIFIC CHARACTER: suffruticosa, glaberrima; *rami* erecti, teretes, rari, ad nodos violacei, sub epidermide lenticellati, juniores vix puberuli; *folia* ampla, 15 centim. et ultra longa, 9 centim. lata, limbo ovato utrinque attenuato basi in petiolum brevem canaliculatum decurrente, integerrimo, supra viridi-olivaceo nervis vix prominentibus in vitta argentea nitentissima immersis, subtus in tota superficie rubro-violacea nervis paulo elevatis atroviolaceis; *flores* in spicas terminales tetragonas dispositi; *bracteae* ovatae, decussato-biseriatae, ovato-acuminatae, ciliatae, viridi-purpureoque in dorso lineatae; *calycis* laciniae-5 acutissimae, tubo corollae duplo breviores; *corolla* subringens, bilabiata, tubo cylindraceo erecto bracteam superante, 7-8 centim. longa, 5-6 centim. lata, labio superiore porrecto carinato inferioris trifidi lobis lateralibus ovatis patulis ovato unguiculatis, lobo medio duplo majore ovato spatulato, omnibus integerrimis splendide vividissimeque scarlatinis v. cinnabarinis; *genitalia* inclusa; *fructus*..... — Nova-Granata, 1872. — Ad vivum descripsi in horto Lindeniano. — ED. A.

Aphelandra fascinator, Linden et André (Lind. Catal. 1873).

The Charmer! Such is the appellation chosen by us for this magnificent species from the time it first delighted our eyes. Its name will be on every tongue this year of grace, 1874. Neither figure nor description can convey to our senses anything approaching an adequate idea of its splendour. Our artist, M. De Pannemaeker, was dismayed before the task of imitating the dazzling vermilion hue presented by its gorgeous spike of flowers, and the delicate silver shades of its foliage, glistening like a Maranta. He felt that the brightest pigments of his palette were a thousand times surpassed by this scarlet powdered with gold, when the light of day was playing upon its polished surface. We experience the same difficulty, and, although the Latin language must preserve for science as truthful a description as possible of this great introduction, we forego an attempt, even, to paint in English words its brilliancy and beauty. The efforts of the painter have exceeded our own, and we once again feel the force of the precept of the Latin poet: That we understand and remember what we have seen better than what we have heard.

Aphelandra fascinator was first discovered no longer ago than the year 1872, in the half-shaded forests of a part of New-Granada, still very little explored. It was described and named in the first place in M. Linden's catalogue, sent out in September, 1873. It is therefore an absolute novelty and quite unpublished; and we trust by favoured propagation it may soon be in the hands of all desirous amateurs.

At the time when *Aphelandra aurantiaca*, discovered by M. Linden in the state of Tabasco, appeared in the "*Flore des Serres*" the beauty of the new plant was highly extolled, and deservedly so, by every one. Twenty years later, in 1867, *A. aurantiaca Roezlii* followed and proved far superior to the type. And more recently *A. nitens* was introduced from Guyaquil and published in English papers.

But how much this transcends all of them in its lovely leaves overlaid with silver in regular bands and clothed beneath with a mantle of purple-violet, and in its enormous spikes of flowers of an indescribable colour, as large as the largest of *Lobelia splendens* and subtended by beautifully striped bracts!

We need not further dilate on this grand acquisition. It is in the stoves of plant-lovers that we hope to meet with it soon when all its beauty and elegance shall have been developed by the arts of cultivation.

E. A.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, edi.

THE KITCHEN GARDEN AND ORCHARD.

THE NEW FRUITS OF 1873.

The past year does not appear to have been very fertile in good new fruits, though the number of new English apples brought forward was very great. Awaiting the completion of the list of those raised in Belgium, France and Germany, we give the following notes, borrowed from the *Gardeners' Chronicle,* on the pomological gains of Great Britain.

In Grapes — the pride and glory of British gardens — Mr Pearson, of Chilwell, contributes a good and handsome late white grape, named *Golden Queen.* It was raised from the *Alicante* crossed by *Ferdinand de Lesseps.* Another variety, Venn's *Black Muscat,* is said to be superior to the *Muscat Hamburgh,* being of a hardier constitution and a better keeper than this excellent grape.

Amongst apples, we may especially recommend as superior: *Barchard's Seedling,* a good variety, productive bearer, and handsome tree; *Lady Henniker,* a good kitchen fruit of the Codlin shape, streaked like the Beauty of Kent; *D. T. Fish* is another large kitchen apple suitable for use in December and January; and the *Worcester Pearmain,* a seedling from the *Red Quarrenden,* is a highly-coloured early dessert apple.

Of Pears there is a singular deficiency. *Lucy Grieve,* an English seedling, is a small, but very delicious fruit of the *Marie-Louise* class, ripening in October.

We may here mention a new species of Pyrus, introduced from Japan by Messrs. Maule and son, of Bristol. It bears clusters of fruit resembling the old Golden Pippin apple. It is of a highly aromatic flavour and makes an excellent preserve.

Dr Roden has brought out some remarkable Strawberries, amongst them, the *Gipsy Queen,* a large late variety; *Enchantress,* of the *British Queen* class, but superior in flavour and more productive; *Sir John Falstaff,* a hardy variety and good cropper; *The Countess* and *Early Crimson Pine.*

Gooseberries are enriched with a beautiful variety, intermediate between *Red Champagne* and *Warrington,* called *Henson's Seedling.*

Amongst melons two varieties are highly recommended, namely, *Read's Scarlet-flesh,* a delicious fruit, and *Gilbert's Green-fleshed,* a vigorous and exquisitely flavoured variety. Both of these varieties have been certificated by the Royal Horticultural Society's Fruit Committee.

We shall return again to the acquisitions of the year that has just expired.

P. Erceau.

NEW VEGETABLES.

In the last number of the *Bulletin du Cercle d'Arboriculture de Belgique* we find in an article by our fellow-labourer, M. Burvenich, whose name is an authority in kitchen-garden matters, an enumeration of several new vegetables from which we select the following:

Beet, *Blood Red.*

Celery, *Fulham Prize Pink.*

Cucumber, *Marquis of Lorne,* a greatly esteemed variety, of which the seeds are still dear.

" *Duke of Edinburgh,* exceeds a yard in length.

Succory, *fringed.*

Broccoli, *Late Queen, Early White* and *Perfection.*

Cauliflower *Veitch's Perfection* and the *King of Cauliflowers.*

Dwarf Kidney Bean, *Canadian Wonder.*

Lettuce, *Verte grasse.*

Melon, *vert grimpant à rames.* green variety for growing on sticks

Pea, *Laxton.*

Potato, *Redskin Flourball.*

" *Bressee's Prolific.*

" *Hundredfold Fluke.*

Leek, *Monstrueux de Carentan.*

Radish, (Turnip-rooted) *White Californian.*

Tomato, *dwarf, with striped fruit.*

Several of the foregoing vegetables are not absolute novelties, but they all deserve a trial, if only on a small scale, and many are undoubtedly first rate varieties.

E. A.

— Relative Hardiness of Conifers. — M. Victor Masson has been collecting some notes on the frost-resisting powers of certain Conifers on his estate at la Chassagne, Côte d'Or. The Cedar of Lebanon will bear a greater degree of cold than the African Cedar; but it starts into growth earlier in the spring, and a late frost on the 28th April last cut all the young shoots. M. Masson recommends the following Conifers for planting in cold situations, *Abies Pinsapo, A. Nordmanniana,* and *A. Douglasii,* in preference to *A. pectinata, A. Apollinis, A. Fraseri* and *A. Cilicica,* as these last are spring-tender and often lose their young shoots and become unsightly. This is of importance to planters of evergreens on a large scale.

— Production of variegated Phormium. — We learn from a letter addressed by M. Richore of Rouen to M. Carrière [1], that a variegated variety of the New-Zealand *Phormium tenax* had sported from a plant of the common green form, which had suffered some injury from frost about three years ago. The variegation is as bright as in the beautiful cultivated varieties, and the offsets possess the same peculiarity. Liquid manure had the effect not only of increasing the vigour of the plant, but also of bringing out the pale yellow bands more conspicuously.

[1] Revue Horticole, 1874, p. 24.

FLORICULTURE.

HAUSSMANNIA JUCUNDA.

When we recorded the first-flowering of this curious Bignoniaceous plant in Europe, we promised to give a more detailed history of it, a promise we now proceed to fulfil.

The genus *Haussmannia* was founded by Baron von Mueller, of Melbourne, upon an Australian plant discovered by Dallachy in Seaview Range, Rockingham Bay. The dedication was made in honour of Baron Haussmann, whose name is inseparable from the enormous works in connection with the remodeling and embellishment of Paris for the last twenty years.

It was first published in Mueller's *Fragmenta Phytographiae Australiae,* IV, p. 148, and subsequently in Bentham and Mueller's *Flora Australiensis,* IV, p. 539. It is characterized as follows :

Calyx campanulate, truncate or minutely 5-toothed, Corolla tubular, incurved, dilated upwards; lobes 5, nearly equal, obscurely arranged in two lips, induplicate-valvate in the bud. Stamens 4, inserted in the tube, and longer than the corolla, with a fifth small staminodium; anther-cells diverging or divaricate. Hypogynous disk cupular, completely inclosing the ovary. Ovary short slightly compressed, the dissepiment transverse. Ovules numerous, in several rows on each placenta. Style with 2 ovate stigmatic lobes. Fruit unknown.

So far as is known at present, the genus is monotypic, and the species may be described thus :

H. jucunda (syn. *Campsis jucunda,* Muell. loc. cit.) a tall glabrous woody climber. Leaves opposite digitate with three leaflets articulate at the end of a petiole from 1 to 2 inches long ; leaflets oval or elliptical, shortly acuminate, entire membranous, penninerved 2 to 4 inches long, narrowed into a short petiolule and the central leaflet occasionally confluent with one of the lateral ones, but no simple leaves in the specimen seen. Flowers in short racemes in the axils of the terminal pair of leaves ; bracts small : bracteoles none. Pedicels 2 to 3 lines long. Calyx very short. Corolla-tube about 1 inch long ; lobes ovate, not 1 line long, hairy inside, yellow and purple. Stamens hairy at their insertion below the middle of the tube, shortly exceeding the corolla.

It will be seen that the description of the genus is still incomplete from want of the mature seed-vessel, which the authors of the Flora of Australia never had an opportunity of seeing.

The plant having flowered at La Muette, Paris, we requested M. Troupeau to fertilize the flowers, hoping to see it fruit. But this gentleman writes " that its flowering was the result of an accident, for the branch was strangled, causing the flowers to open prematurely and fall at once, the branch perishing soon after. „ However as the plant has many small branches, it is expected it will flower again in the Spring and furnish the materials for completing the description. E. A.

ORNAMENTAL GARDENING.

Cajophora coronata, Hooker and Arnott, (*Loasa coronata,* Gill. mss. — *Loasa absinthifolia,* Presl. — *Blumenbachia coronata,* Hort.) — Messrs. Haage and Schmidt, of Erfurt introduced this plant from Chili, and sent it out under the last name cited above. We prefer retaining the name of *Cajophora coronata,* given by Hooker and Arnott in their *Botanical Miscellany,* vol. III, p. 327, the genus *Blumenbachia,* Kœl. having previously been established for some grasses *(Sorghum).* We shall thus avoid all possibility of confusion in nomenclature. The plant belongs to the small family of *Loasaceae.* It is herbaceous, forming dense tufts of finely-cut leaves, resembling those of an *Artemisia,* in the midst of which the pretty pure white flowers lie half hidden, as if reposing in a nest of lace-work. The corolla is composed of four saccate divisions of exceedingly curious formation. It is a biennial, and flowers profusely the second season, in a light, rich soil, in a sunny situation. It will succeed well if treated in the sameway as *Cajophora lateritia.*

TROPICAL FRUIT-TREES.

II. Avocado or Alligator Pear.

The Avocado belongs to the genus *Persea (P. gratissima,* Gærtn.) (1) of the Sweet Bay family. Although the genus comprises some fifty species, described by Meissner (2), the one in question is the only one of importance, or at any rate, generally known. It is a native of Central America, but it is now found in nearly all tropical countries. It was introduced into Mauritius in 1750.

Besides the above names, it is variously called Aguacate, Avocate, Palto, and Vegetable Marrow or Midshipman's Butter by the English. The appellation *Alligator Pear,* is derived from the fact that the Cayman has a great partiality for the fruit. Jacquin describes the tree as forty feet high, surmounted with a handsome crown. The elliptical leaves are alternate, petiolate and about six inches long by two broad. The flowers are borne at the extremities of the branches in cymes or clusters, and appear after the fall of the leaves, at least when cultivated under glass. The perianth is composed of six divisions, of which the three inner are shorter. *Andraecium* consisting of twelve stamens in four series, the innermost series sterile, and the inner series of fertile ones having two globular stalked glands at their bases; fertile anthers opening by four little recurved valves. The pistil is composed of a solitary, 1-celled ovary with a single ovule, pendulous from the top of the cavity. When ripe the fruit is of the size and shape of a large pear, more or less elongated according to the variety, with a brownish green skin, tinged with purple or yellow. The drupe incloses a stone or nut with a cartilaginous envelop, containing the exalbuminous seed with large fleshy cotyledons.

The pulp of the Avocado is the only part esteemed. It is soft and buttery, with little smell. In flavour it resembles butter, to heighten which it is eaten with spice, lime juice or pepper and salt. At first it is not greatly relished by Europeans, but after the taste for it is acquired it is considered one of the greatest luxuries of the tropics. But if eaten unripe it induces fever and dysentery. Jacquin states that all animals, without exception, are fond of this fruit.

Tussac (3), following the example of Salernus, who speaks of a plant that excites a kind of appetite which cannot fail to become fashionable, says of the Avocado:

Excitat ad venerem tardos Persea maritos.

The nut is about the size of a small egg, containing a kernel which is still soft when the fruit falls; and the thick, milky, not soapy juice, which eventually solidifies, possesses the singular property of indelibility. It is used for marking linen, etc., and is of a red or reddish colour. An oil is also extracted from the seeds by boiling, which rises to the surface of the water. It is said to be used as an emollient in the treatment of scurvy. The young shoots are reputed valuable as an emmenagogue, and the leaves are astringent. And the soft, white wood is of no use except as fuel.

The Avocado requires stove treatment. It is necessary to be careful in the use of water during the period of rest; for it appears that its large fleshy roots frequently rot under cultivation from an excess of moisture. The seed must be sown as soon as gathered. J. Fish.

INTERNATIONAL HORTICULTURAL EXHIBITION AT FLORENCE.

We have received from Prof. Parlatore the following additional particulars respecting the forthcoming festival: The Exhibition will take place in the new Central Market Building, which is to be formally opened to the public on the occasion of this great horticultural gathering. The building is situated near the central railway station, not far from the centre of the city, in the vicinity of the Duomo, picture galleries, and other principal monuments. It is itself one of the most imposing modern edifices in Florence, being a square building, 230 by 260 English feet, covering under its glass roof an area of about 59,800 square feet. This immense space is only broken by two rows of elegant cast-iron columns, dividing the two aisles from the nave. The nave is 115 feet, and the aisles 75 feet high. Only cast and wrought iron, glass and massive blocks of hewn stone were used in the construction of this vast building.

The interior will be transformed into a conservatory, including a stove for orchids in bloom and other plants requiring a higher temperature. Both fresh and salt-water aquariums will be constructed, and a special tank for the *Victoria regia* and other *Nymphaeaceae.* Large Palms, Tree Ferns and other large specimens will be associated with groups of tender and hardy plants in bloom requiring shade.

The open space around the principal hall will be placed at the disposal of exhibitors of trees shrubs, Conifers and other hardy collections.

The colonnades, 230 feet long, running down each side of the main building, will be reserved for horticultural machinery, implements and structures. Books, paintings, photographs and chromolithographs of plants, plans and designs for gardens, collections of dried plants and other Botanical objects, fruits, vegetables, fungi, etc., will be deposited in some of the numerous galleries and apartments. Some of the rooms have been set apart for the use of the Judges, for conversational meetings, lectures, for the lady patronesses, and also a refreshment and coffee saloon. The Government has just consented to locate a special customs office on the spot, so that all packages arriving from abroad will be opened and unpacked under the direct supervision of the Executive Committee of the Exhibition.

The meetings of the International Botanical Congress will be held in the apartments of the Natural History Museum,

(1) Gaertn. Fr. 5, p. 222.
(2) D. C. Prod. Vol. XV, pars 1, p. 51.
(3) Flore des Antilles.

in the midst of those grand collections which make this establishment, rendered famous by Galileo and Micheli, the first of its kind in Italy. Upon this occasion the Congress will solemnly inaugurate the monument erected in one of the halls of the Museum in memory of P. B. Webb, the learned illustrator of the Canary Islands, who so generously contributed to the enrichment of the botanical collections by the legacy of his herbarium and library and the establishment of a fund for enlarging and keeping the said collections. This ceremony will be all the more interesting as Sabin Berthelot, the father of French Botanists and the active companion and fellow-labourer of the departed Webb, will, although upwards of fourscore years of age, leave his peaceful home in Teneriffe and brave the discomforts and fatigue of the sea-voyage in order to be present. Already a great number of the most distinguished botanists of Europe have signified their intention of taking part in the Congress, and everything tends to strengthen the belief that this gathering, favoured by special circumstances, will be really fruitful in beneficial results.

By the desire of several foreign exhibitors, the Executive Committee have consented to extend the time for the reception of demands for space till the end of February. Nevertheless, seeing the large number already registered, the Committee strongly urge upon all those persons desirous of space who have not yet made application, to do so without delay.

All countries, including the most distant, will be represented at the Exhibition, important contributions having already been announced from Egypt, Australia, Brazil and other parts of America, as well as from Russia, Greece, Sweden, etc., etc. Belgium and Holland, the classic ground of Horticulture, have worthily responded to the call, a very large number of exbibitors having hastened to enter for competition in the principal classes.

The Dutch Government purposed forming a special commission under the presidence of His Eminence the Count Schimmelpenninck of Nyenhuis, with the aim of furthering the interests of the Exhibition in every way possible.

CULTURE OF AMARYLLIS PROCERA.

As recently observed by M. André, ever since this plant was first introduced into Europe, the imported plants have rarely flowered a second time. They have been sent principally from Brazil in an adult stage, with the inflorescence already formed, which, from the suffering caused by the voyage, was soon put forth. Afterwards, nothing further, the plants barely making a few leaves each year, not to speak of showing their beautiful lilac flowers again. In this way the numerous plants we have had at La Muette have behaved up till this season.

Remembering this disadvantage, we altered our course of treatment, and succeeded in obtaining flowers in the following manner.

We wintered the bulbs partially at rest, in pots, in a temperate house. On the 15th May we had them removed into the open air, placing them in the most exposed part of the garden. Particular care was observed in placing the plants to let them face in the same direction as when standing in the house, in order not to put any restraint upon the curvature, which the stem naturally assumes, *and which is always towards the south.* We believe that our success in flowering this beautiful plant is due to this circumstance.

TROUPEAU.

BIBLIOGRAPHY.

RÉFLEXIONS SUR LES OUVRAGES GÉNÉRAUX DE BOTANIQUE DESCRIPTIVE (¹). — CONSIDERATIONS OF THE GENERAL WORKS OF DESCRIPTIVE BOTANY. — On the occasion of the completion of the Prodromus we notified to our readers the receipt of a pamphlet from M. Alphonse De Candolle, of which the following is a hasty summary:

The necessity of general works of descriptive Botany has always been recognized from Theophrastus to the present day. Early botanists published Encyclopædias comprising all that was known at their respective periods of plants and their properties. But it soon became necessary to study special subjects and divide the work.

Prior to Linnæus, there were the learned treatises of Dodonæus, Clusius, Bauhin, Matthiolus, Ray and others. Then came the great reformer of botany with his artificial system of classification, and with it his everlasting method of binominal nomenclature. The *Species Plantarum* (Linnæus 1753) contains fewer than 6000 briefly described species. Wildenow, Roemer and Schultes, Sprengel, Dietrich and Persoon followed in this abbreviated style. Matters went on thus until 1812 and 1813, when Augustin-Pyramus De Candolle conceived the mighty project of a *Systema*, which should contain detailed descriptions of all known plants, estimated at that period from twenty five to thirty thousand. This too lengthy *Systema* gave way to the *Prodromus*, embodying a more concise form of description. The Linnæan classification was courageously and wisely abandoned in favour of the Jussieuæan system. This great work, which has been in progress for sixty years, M. De Candolle, assisted by the principal European botanists, has just brought to a close. It contains monographs of 214 Dicotyledonous families, comprising 5134 genera and 58978 species, double the number supposed to exist in the vegetable kingdom at the beginning of the present century. For thirty years, A. P. De Candolle toiled alone on this gigantic undertaking. He then secured the aid of a few fellow-workers, and dying in 1841, his son, M. A. De Candolle, inherited the onerous task of finishing the work to which he has just written the word FINIS. Some portions of the *Prodromus* exhibit an immense amount of labour and research on the part of the authors, especially by Bentham, Decaisne, Mueller, Meissner, Dunal, Nees, Moquin-Tandon, Boissier, Choisy, Schauer and Parlatore, without mentioning the names of a great many other illustrious men who have contributed to the building of this monument of perseverance, or M. Alph. De Candolle himself, who has done by far the largest share of the work.

While paying our tribute of homage due to the multitude of learned contributors to the *Prodromus*, we take the opportunity of recording an earnest wish that the Monocotyledons may speedily be taken in hand and treated in the same exhaustive and connected manner.

E. A.

(¹) Octavo tract of 25 pages. — Archives des Sciences de la Bibliothèque universelle de Genève. Nov. 1873.

HORTICULTURAL CHRONICLE.

April, 1874.

— LIST OF BOTANICAL GARDENS, MUSEUMS AND HERBARIA. — M. Ed. Morren has recently published a pamphlet which will be of great service to botanists. It is as complete a list as it was possible to compile of the Botanical Gardens, Chairs and Establishments of the whole world. The title is somewhat comprehensive, and it may readily be supposed that some inaccuracies have crept in. M. Morren calls upon botanists, and those in a position to afford correct information on this subject, to furnish him with additions and corrections to enable him to extend and improve future editions. Such as it is at present, it will prove a most useful aid to botanists and others, who experience great difficulties in ascertaining the addresses of their foreign colleagues. M. Morren's address, from whom the list in question may be procured, is: la Boverie, Liége, Belgium.

— CANNA IRIDIFLORA. — This exceedingly beautiful plant, a native of Peru, discovered, and named and described by Ruiz and Pavon in their *Flora Peruviana*, has been repeatedly introduced into our gardens, and as often lost; and once again it appears to have nearly or quite disappeared. We were formerly very successful in growing this plant in the municipal gardens of Paris at La Muette. We should esteem it a great favour, if any reader of the *Illustration*, knowing where it may be had, would kindly communicate the information.

— RAPATEA PANDANOIDES. — The plant that we published under this name in the December number of the *Illustration Horticole*, was the object of a notice from the pen of Dr Maxwell Masters in a recent number of the *Gardeners' Chronicle*. The learned editor of the English Journal thinks that the genus *Saxo-Friedricia*, created by Schomburgk for another Xyridaceous plant from Guiana, and kept up by Dr Körnicke in his Monograph of the Rapateæ, should be adopted for this curious species. We shall state our reasons further on for preserving *Rapatea*, in preference to sanctioning the abuse of founding new genera upon the most minute characters, a course that would soon lead to all science being turned topsy-turvy. This unfortunate mania for creating genera was pushed to its utmost limit by Klotzsch, who split up the genus *Begonia* and made about *forty new* genera out of one of the most natural genera known. But De Candolle in his monograph of the *Begoniaceae* was not deterred from reducing them all, excepting one, to the rank of sections of the genus *Begonia*.

— INTERNATIONAL EXHIBITION AT FLORENCE. — We have received some important additional information respecting the forthcoming grand floral festival at Florence. First as to the facilities accorded by the railways. The Northern Railway of France (from Calais and Boulogne), the Eastern Railway, the Orleans, and the Lyons and Mediterranean lines, have granted a reduction of one half for all plants or other objects sent to the Exhibition and returned from it. The Charente and Vendée lines, as well as that from Vitré to Fougères have granted a similar reduction to exhibitors, members of the congress, and of the jury. The Frayssinet Steamboat company offers the same advantages both for passengers and objects; and the Messageries Maritimes and Générale Transatlantique will make a reduction of fifty per cent on the charges for goods and thirty per cent on passengers' fares. In Belgium (from Ostend) all the railways have conceded a reduction of fifty per cent on all good sent to Florence. In Holland (Rotterdam) the railways will transmit privileged passengers as above and plants, for half-fares. The Dutch Steamboat company plying between Amsterdam and the Italian ports goes further still, *offering to convey goods gratis!* No information has yet been received from either Prussia or Austria. All the Italian railways will convey goods and passengers, both ways, at half-rates.

Members of the congress and of the juries, as well as exhibitors, will receive their tickets, which will ensure to them the rights above alluded to, early in April.

Exhibitors will be provided with a duplicate certificate, one of which they will retain, and which will procure for them the facilities above mentioned, and secure exemption from custom-house formalities on the frontier. The other must be sent by post to the committee, properly filled up. Special labels will be sent by the committee to exhibitors to be affixed to their respective packages. All packages should arrive in Florence not later than May 5.

The customs examination will take place in the exhibition. No dues will be demanded except for plants sold.

All the scientific institutions and societies of Florence are prepared to show hospitality to exhibitors and members of the Jury and Congress. The Philological club will be thrown open to them. Special meetings in their honour will be held in the Alpine club. The Entomological society will organise a special meeting; and, that nothing may be wanting to the amusement of visitors, the horse races will be held at the same time as the exhibition.

Her Royal Highness the Princess Margaret, the president of the lady-patronesses, is expected to open the Exhibition in person.

All communications should be addressed to the *Executive Committee of the International Horticultural Exhibition of Florence.*

— SYSTEMATIC BOTANY. — Speaking of *Rhipsalis Houlletii*, in the last number but one of the *Botanical Magazine*, Dr Hooker complains of the difficulties experienced by botanists in discovering the origin of garden names of plants. He adds that this impediment increases at a serious rate, and that the perplexities of nomenclature will soon become insurmountable. We most cordially agree with the learned director of Kew Gardens, but we go even further, and affirm that the selfsame difficulties are apparent to those using purely botanical works, whether physiological or systematical. Very many original articles and monographs are pub-

Mo. Bot. Garden.
1897.

lished in obscure periodicals and remain unknown to the majority of botanists. If they are not in the public libraries, the unfortunate investigator, who is unable to purchase everything as it appears, has often the mortification of finding that his labours are incomplete or in a measure forestalled.

To overcome this evil, we think it necessary that the public libraries should keep pace with science, and deem it desirable that all original papers should be communicated, in a condensed form, at least, to one or the other of the organs of the societies at the head of science, which come under the notice of all botanists worthy of the name. And when, may we ask, will the time arrive that the important work of Walpers will be resumed, which has been stationary ever since the appearance of the last part in 1869?

— Review of New Plants. — Several of our readers having signified their wish to see us take up again the review of new plants published in other periodicals, we shall start afresh in our next number. And, in order to render it as useful and complete as possible, we shall recommence at the point where we left off.

— The Eucalyptus insect. — From observations made by M. Riviere in one of his late journeys to Algeria, it appears that the extensive plantations of *Eucalyptus globulus* which are in course of formation in this colony, are in serious danger from the ravages of an insect. Dr Boisduval has recognised this insect as the *Rhizotrogus euphytus*, which is particularly destructive in the larva state, when it preys upon the roots of plants and causes them to die.

— Double-flowered Zonale Pelargoniums. — M. E. Sisley, of Montplaisir, Lyons, the well known amateur and successful raiser of these beautiful plants, is engaged in searching out their history, and has requested us to ask our readers if any of them can remember the time and place where the first double Pelargonium appeared, which, he is informed, happened in Belgium, about fifty years back. We willingly give publicity to his wish, and shall be happy if any of our correspondents can afford him the desired information.

— Grand National Horticultural Exhibition at Manchester. — The entries for this important show close on May 13; and the show opens on May 22. This is one of the best exhibitions in England away from the metropolis. Several classes have been introduced with the object of obtaining materials for effective arrangements, as for instance: pairs of Tree Ferns, pairs of Greenhouse Palms, pairs of Standard Box-trees, pairs of Standard Hollies, pairs of pyramidal Bays, pairs of Yuccas, groups of Yuccas, groups of Dracaenas, groups of Crotons, groups of Marantas.

— East Indian Orchids. — At a recent sale of Indian Orchids at Stevens' Rooms the prices realised were: *Cypripedium Parishii*, masses with five shoots 80 s. to 115 s.; smaller plants 50 s. to 63 s.; *Dendrobium infundibulum*, from 45 s. to 63 s.; *D. thyrsiflorum*, a mass with sixteen bulbs 190 s.; six strong specimens of the same, 63 s. to 110 s.; *D. Jamesianum*, a strong specimen with forty-four bulbs, 42 s.; *Coelogyne (Pleione) Reichenbachiana*, four strong bulbs 45 s. to 60 s.; *Vanda Bensoni*, six strong plants, 42 s. to 63 s.; *Vanda coerulescens*, one fine plant, 147 s.; two smaller specimens 40 s. to 110 s.

— New Masdevallias. — M. Linden has received three new species of *Masdevallia* from M. Roezl, who discovered them in northern Peru. They are: *M. melanopus*, having white flower-tubes, and very dark ovaries and tails; *M. caloptera* having larger, probably white flowers, with dark purplish or violet longitudinal stripes on the sepals — two on the upper-sepal and three on each lateral one; and the highly curious *M. polysticta*, bearing spikes of 7 or 8 pale or white flowers, with numerous dark-brown spots. M. Roezl found tufts of this species bearing twenty flower-spikes at the same time.

These additions to this peculiar and interesting genus will give a fresh impetus to the favour they have enjoyed in England and Belgium during the last few years.

We may take this opportunity of laying before our readers the following extracts taken from a new English work entitled: *Cool Orchids and how to grow them, with Descriptions of all the best Species in Cultivation*, by F. W. Burbridge.

" The genus *Masdevallia* includes a considerable number of species, many of which come from the higher ranges of the Peruvian Andes, where they luxuriate in cool moist localities. They are of the easiest possible culture, growing and producing abundant crops of their curious, trifid, caudate blossoms, nearly all the year round. They should be placed in small pots on a compost of fibrous peat, fresh sphagnum, crocks, and a little fibrous loam — that which has been sifted and the fibrous lumps only retained being best. They will be found to flourish at the coolest end of the house in company with *Disa*, *Oncidium macranthum* and various species of *Odontoglossum*; and their glowing lilac and bright orange scarlet and purple flowers form an agreeable contrast to the pure snowy white and golden-yellow flowers of the plants named. The best of all in cultivation are: *M. Veitchi*, *M. Lindeni*, *M. Harryana*, *M. tovarensis*, *M. coccinea* and *M. maculata*, but some of the best have yet to be introduced to our collections. „

With the foregoing simple directions every amateur may venture to indulge in the pleasure of growing these delightful little Orchids.

— Theophrasta imperialis. — At the last meeting of the scientific committee of the Royal Horticultural Society of London Prof. Dyer exhibited seeds of the plant called in gardens Theophrasta imperialis (Regel, *Gartenflora*, t. 453). From the evidence now forthcoming it appears that the plant in question is certainly no *Theophrasta*, but belongs to a different family, Sapotaceae. The seeds have also the character of those of the last named order, having a very large hilum with the micropyle at one end.

— Crystal Palace great flower show. — The date of holding this attractive show has been altered from May 16 to May 9.

— Exhibition of the Société Royale de Flore, Brussels. — This show was held in the New Exchange, on April 4. Important duties having prevented us from being present in the capacity of judge, one of our correspondents has undertaken to furnish us with same notes which we shall publish in our next.

E. A.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

Pl. CLXV.

ONCIDIUM SARCODES, LINDLEY.

NAT. ORD. ORCHIDACEAE.

ETYMOLOGY : from ὄγκος a tumour in allusion to the callosities present on the labellum of most species.

GENERIC CHARACTER : *Perianthium* explanatum. *Sepala* saepius undulata; lateralibus nunc sub labello connatis. *Petala* conformia. *Labellum* maximum, ecalcaratum, cum columna continuum, varie lobatum, basi tuberculatum vel cristatum. *Columna* libera, semiteres, apice utrinque alata. *Anthera* semibilocularis, rostello nunc abbreviato, nunc elongato rostrato. *Pollinia* 2, postice sulcata, caudicula plana, glandula oblonga. — *Herbae* epiphytae nunc pseudobulbosae. *Folia* coriacea. *Scapi* paniculati vaginati, varius simplices. *Flores* speciosi, lutei, saepius maculati, raro alba. (Lindley, Genera and species of Orchidaceous plants.)

SPECIFIC CHARACTER : *pseudobulbi* subcylindrici 0m075 longi; *folia* 2-3 apice pseudobulborum, erecta, lanceolata; panicula racemosa, angustata; *scapus* erectus, 0m33 longus; *flores* magni, brunneo-lutei; *sepala* libera obovata, planiuscula, *petala* majora unguiculata-obovata-spathulata repanda; *labelli* lobi laterales nani serrulati, intermedius maximus undulatus repandus emarginatus; *crista* linearis apice biloba tuberculosa pubescens; *columnae* pubescentis albae clinandrium anguste marginatum alis carnosis truncatis glabris. — In Brasilia. — Vid. viv. in hort. Linden. — Charact. praesert. e cl. Lindley descript. desumptis. — E. A.

Oncidium sarcodes, Lindley, *Journ. of the Hort. Soc.* IV, 260.

— Rigbyanum, *Paxt. Mag.* XVI, 257, et Van Houtte, *Fl. des Ser.* VI, 237.

This beautiful Orchid was described by Lindley more than five-and-twenty years ago, from specimens collected in Brazil; and it is also known under the name of *O. Rigbyanum*, given by Paxton. Although it has been repeatedly introduced, it has always remained rare in collections; and we were very much gratified at seeing it again in flower last year, at M. Linden's. It is a strong growing species, with nearly cylindrical pseudobulbs, from two and a half to three inches long, surmounted with two or three lanceolate erect leaves.

The flowers are yellow mixed with a brownish-red and spots of a deeper tint, are borne several together in narrow panicles, a foot or more in length.

The sepals are free, obovate and nearly flat, and the somewhat larger clawed petals, are obovate-spathulate and incurved. The labellum is broad, the lateral lobes but slightly developed, and the central one very large, undulated and curved, of a pretty yellow, spotted with deep green.

The pubescent crest is linear and bilobate at the summit, and the narrow white column is furnished with fleshy cuneate glabrous wings. According to Lindley, it has quite the habit of *O. pubes* and *O. amictum*. It is distinguished from its allies by its downy column, serrated side-lobes of the lip, and its peculiar hairy bilobed crest.

In addition to its singular beauty this plant possesses the important good quality of easy culture, being as free a grower as most of its congeners from the Brazilian forests.

Ed. A.

CANNAS, OR INDIAN SHOT PLANTS.

Count de Lambertye, who has long been engaged upon this very ornamental genus of plants, and who has bestowed great care upon their elucidation, has recently published in the *Revue Horticole* a summary of his investigations since 1869. We believe we shall be doing good service by placing the following abstract before our readers, which embraces the best varieties for cultivation. We shall thus enable the lovers of these plants to improve their collections by substituting the better varieties of the last few years for the older inferior ones.

A. Cannas suitable to grow for their flowers : *Compactum*, Nardy; *Ed. Morren*, Sisley; *Gaboniensis*, Croizy; *Imperator*, André; *Jean Vandael*, J. Sisley; *Comte de Lambertye;* Chaté; *Mad^me Schmidt*, Nardy; *Prince Impérial*, Chrétien; and *Sénateur Chevreau*.

B. Cannas with fine foliage and pretty flowers : *discolor violacea*, Boucharlat; *Gloire de Lyon*, Croizy; and *liliiflora*, Warscewicz.

C. Cannas suitable to grow for market : *Pie IX* and *Prince Impérial*. — The first of these was raised by the late M. Rantonnet, and the other by M. Chrétien of Lyons. They are two capital plants for growing for market or on a large scale. They are of moderate size and perfect habit; the first having deep yellow flowers tinged with cinnabar, and the second bright red. If the offsets are placed in a hot-bed about the middle of March they will make nice plants by the middle of June.

Arrangement for a very effective bed.

Length 46 feet, breadth 23 feet.

First row, 15 inches from the turf and 18 inches apart in the row, alternately *Pie IX* and *Prince Impérial*.

Second row,	23 inches each way,	*Bihorelli.*
Third row,	" "	*Prémices de Nice.*
Fourth row,	" "	*Annei superba.*
Centre,	25 inches apart, each way,	*Auguste Ferrier.*

Culture of Cannas, after the Count de Lambertye.

Divide the offsets towards the end of March leaving one or two heads to each portion of rhizome, and slightly plunge them in the mould of a hot-bed, affording a continuous heat of 65 to 75 Fahr.

In the course of a fortnight or three weeks all the buds will have started.

About April 20, remove and pot the plants in 6-inch pots, in a rich compost containing leaf-mould, with a drainage of moss at the bottom. Plunge the potted plants in the same hot-bed, and if not of sufficient height, place one frame above the first : shade, syringe, shelter at night, and ventilate in about a week's time. Plant out about May 20 in a rich well-moved soil, adding a little course mould around each plant. A good top dressing and frequent and liberal watering during the summer will ensure healthy and luxuriant foliage.

J. D.

PL. CLXVI.

CARLUDOVICA IMPERIALIS, LINDEN & ANDRÉ.

NAT. ORD. CYCLANTHACEAE.

ETYMOLOGY : Dedicated by Ruiz and Pavon to king Charles IV of spain and his Queen Louisa, who were munificent patrons of botany.

GENERIC CHARACTER : *flores* monoici in eodem spadice. *Spatha* tri-tetraphylla, foliolis imbricatis. *Spadix* cylindricus, floribus dense obtectus. *Masculi* : quaternatim aggregati, femineos solitarios stipantes. *Perigonium* obverse pyramidatum, basi carnosum, limbi brevissimi multifidi lobis biseriatis, aestivatione imbricatis. *Stamina* plurima, perigonii parietibus inserta ; filamenta filiformia, brevissima ; antherae lineares, biloculares, loculis oppositis, longitudinaliter dehiscentibus. *Flores foeminei : perigonium* cum ovario cubico connatum, limbo supero, quadrifido, persiste. *Staminodia* 4, limbi laciniis opposita et basi adnata, filiformia, elongata, decidua. *Ovarium* inferum, uniloculare, placentis parietalibus quatuor. *Ovula* plurima, horizontalia, anatropa. *Stigma* sessile, cruciforme, *Bacca* tetragona, perigonii limbo superata, unilocularis. *Semina* plurima, oblongo-cylindrica. — *Plantae americanae tropicae, caulescentes v. rarissime acaules; caulibus ut plurimum lignescentibus, saepissime scandentibus, radiculis aëreis arborum cortici adhaerentibus, interdum ex iisdem funium ad instar pendulis, semper tamen in solo radicantibus, foliis coriaceis in petiolum attenuatis, bi- v. rarius flabellatim tri-quinquepartitis, spadicibus axillaribus v. radicalibus pedunculatis, spathis membranaceis, albis v. roseis, floribus masculis caducissimis, foemineorum staminodiis longissimis, primum lineis dedaleis circa spadicem flexis et eidem oppressis, mox pendulis, cito deciduis.* (Endl. *Gen. Pl.* 1713.)

Carludovica, Ruiz et Pavon, *Prodr.* 136, t. 31.

SPECIFIC CHARACTER : *radix* fibrosus ; *caudex* brevissimus, repens, radicans ; *folia* amplissima, erecta, basi late vaginantia, marginibus scariosis ; *petioli* basi tumidi, viridi-violacei, glaucescentes, robusti, canaliculati marginibus convolutis apice subteretibus ; *limbus* bipartitus unicostatus costis 2 infra valde prominentibus, lobis ovato-lanceolatis 60 cent. longis. 12 cent. latis nitente-viridibus, late plicato-sulcati suberecti apice decurvati, sulcis linea media elevata percursis ; *scapus* erectus brevis apice incrassatus ; *spathae* amplexantis foliolae magnae inaequales cucullatae acuminato-acutae carnosae, externe sulcatae, brunneo-salmoneae, remotae, superiores minores ; *spadix* cylindraceus elongatus, roseus, vitta carnosa nigrescens spiraliter perianthium florum foemineorum amplexans ; *staminodia* (v. filamenta sterilia) longissima et numerosissima, cito post anthesin decidua. — Ecuador 1868. Ad viv. desc. in hort. Linden. — E. A.

We have had this beautiful species under observation at M. Linden's for a good many years, and have watched its progressive development with the greatest interest. It has excited general admiration at the exhibitions where it has been shown, and will now be sent out after a long probation. It is of vigorous and luxuriant growth ; its fine large shining bipartite leaves, with strikingly prominent ribs, its violet-red petioles, shaded with salmon, and its projecting clusters of flowers : all combine to render it one of the most effective foliage plants in cultivation. We can strongly recommend it as one of the most magnificent plants with ornamental foliage, amongst the more recent introductions from Colombia ; and there is little doubt that it will become a great favourite.

Ed. A.

NEW PLANTS.

— Begonia Worthiana, Barré. — M. Barré, gardener for M. Worth, at Suresnes, near Paris, obtained this beautiful variety from seed. It is reported as a plant of great merit, and is now being sent out. It belongs to the section with tuberous roots. The stems are stout and fleshy, of a green colour and about 15 to 18 inches high. The leaves are bi-stipulate at the base, green on both surfaces, and of an obliquely ovate-acuminate outline. The large, drooping flowers are of an orange-red shaded with carmine and are borne on reddish peduncles. They are said to exceed in beauty those of *B. Sedeni.*

This plant will prove valuable for bedding out in half-shaded places during the Summer ; and will doubtless soon become plentiful in gardens.

— Begonia octopetala. — This Begonia was originally introduced to the Jardin des Plantes, where, however, it does not appear to have produced flowers. In 1835, it was introduced into British gardens from Lima, by Mr J. Mc Lean. In 1836, in flowered in the Glasgow Botanic garden and was figured in the Botanical Magazine the following year. It has recently been reintroduced from the Andes of Peru by Messrs Froebel of Zurich. We do not know who collected it, but most likely, M. Roezl., who is in correspondence with M. Ortgies, the curator of the Botanic Garden of Zurich. *B. octopetala* has lobed, cordate or reinform, toothed leaves, borne upon long petioles. The flowers are white, pink or more or less red, and very large for the genus. Several are borne together on the long scapes ; the male-flowers being larger and usually 8-petaled, whilst the smaller females commonly have only six petals. As observed by sir W. J. Hooker, in his description of this plant in the *Botanical Magazine*, it has very much the aspect of an Anemone, both in foliage and flower. In short, it is a very beautiful species of the tuberous-rooted set, and the white-flowered variety offers an excellent subject for hybridisation with some of the numerous forms in cultivation.

E. A.

— Abies Douglasii Stairii. — A new variety of this handsome Pine, which has long been talked about, is now announced as ready to send out. It differs from the ordinary form in its beautiful silvery foliage, contrasting admirably with the rich dark green of its parent. The variety in question was detected by Mr Fowler, the gardener at Castle Kennedy ; and is stated to be a novelty of great merit.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden ...

Etab. Chromo. de C. Stroobant, à Gand.

L'Illustration Horticole.

J. Linden, publ.

PL. CLXVII.

DIEFFENBACHIA LANCIFOLIA, LINDEN & ANDRÉ.

NAT. ORD. AROIDEAE.

ETYMOLOGY : A dedicatory name in honour of Dieffenbach, a German botanist.

GENERIC CHARACTER. — *Spatha* vegeto-persistens. *Spadix* parte feminea acerata. *Ovaria* staminodiis ovarium superantibus, basi connatis, circumdata, plurilocularia, (abortu unilocularia), stigmate sessili, convexo, 1-3-gibbo. *Fructus* spatha disrupta baccas sphaeroideas rubras monstrans. *Semen* exalbuminosum. *Embryo* macropodus, germinatione admotiva. *Caudex erectus vel decumbens. Petioli fol. inferiorum longiores, proportione brevius folior. spadiferorum breviores, altius et latius vaginati. Lamina fol. infer. major, spadiciferorum minor, imo cuneato, semper oblonga vel ovata, integerrima.* — Schott Prod. Aroid. 326.

SPECIFIC CHARACTER : affinis *D. pictae; caulis* erectus, cylindraceo-nodosus, carnosus, atroviridis; *vaginae* tenues translucentes albidae; *petioli* breves late amplexicaules maculis viridibus albidisque depictis, in costa alba infra limbum elongati, apice auriculis 2 erectis obtusis membranaceis translucentibus muniti; *limbus* lanceolatus oblique subcordatus longe acuminatus apice mucronato-decurvatus, textura pergamenea, costa paulo prominente, marginibus undulatis, superficie nitente-viridi, maculis permultis luteolis sparsis alterisque paucis niveis minutis conspersus; *flores....* — In Columbia legit Roezl, anno 1871. — Ad viv. desc. in hort. Lind. — E. A.

Dieffenbachia lancifolia, Linden and André, in Lind. Catal. 1874.

The horticultural public is indebted to M. Roezl for the introduction of this pretty plant. He discovered it in Columbia in 1871 and sent it to M. Linden. It has long been described, but we were compelled to wait until its propagation was ensured, before we could speak of it as a novelty within the reach of all who might desire to possess it. We are fully persuaded that it will be extremely welcome to all lovers of plants with ornamental foliage. It is readily distinguished, at the first glance, by its narrow lanceolate leaves, which find no counterpart amongst the species of *Dieffenbachia* introduced into England and Belgium during the last few years. In habit it comes near our *D. picta,* but it differs considerably in its foliage, and greatly exceeds the latter in beauty.

The stout cylindrical stems are fleshy and tumid between the petioles, and the delicate transparent sheathes of the latter are nearly white, encircling the stem for a considerable length. The petioles are spotted with green and white, and extend along the under side of the blade in a white rib. The blade itself, the chief ornament of the plant, is elongate-lanceolate, obliquely cordate at the base, terminating in a recurved mucro. In texture it is rather more pergamentaceous and less decidedly fleshy than in most species. The beautiful polished green midrib is scarcely raised above the upper surface, and from it more or less numerous pale yellow blotches are given off, here and there intermixed with others of a pure white.

With this, as with many other species of this genus, so enormously increased within the last few years, we have not had an opportunity of examining the flowers.

It will succeed admirably in an ordinary stove; and should be frequently renewed from suckers, which it gives off abundantly. Indeed this is the only way to secure fine foliage.

ED. A.

THE KITCHEN GARDEN AND ORCHARD.

THE POTATO BEETLE OF COLORADO.

Our gardens and fields, already ravaged by so many scourges, are threatened by another, in the shape of an American beetle, which has given rise to a great deal of talk. We hold it our duty to make our readers acquainted with the nature of this new enemy, at least so far as our information goes; for though it has not yet appeared on our shores, it is greatly to be feared that it will do so. The British Government, in reply to an urgent request from the Central Chamber of Agriculture, has refused to interfere with the importation of American Potatoes, for, " according to American Official Reports, it does not appear that the eggs or larvæ of the Colorado Beetle have been or are deposited or conveyed in the tubers of the Potato. „

For some years past two very destructive coleopterous insects, *Lytta atrata* and *Cantharis viniaria,* have been causing great damage to the Potato crops in North America. However, the exercise of a little care is sufficient to hinder the spread of these insects; but a third has appeared in the United States, which threatens to prevent the cultivation of the Potato and utterly annihilate this valuable tuber.

This insect is the *Doryphora decemlineata*, or more correctly, *Chrysomela decemlineata*, Dejean. Its specific name refers to the *ten* black lines which traverse the yellow ground of the elytra. It was originally found on the Rocky Mountains, feeding upon *Solanum rostratum* — not, as has been erroneously stated, on *S. Carolinense*, L. From thence it spread over the first Potato-plantations made on the slopes of the mountains, rapidly advancing eastward and devastating the crops. In 1859 it was observed in Nebraska, 100 miles west of Omaha; in 1861 it reached Iowa; in 1865 it had crossed the Missouri and the Mississipi, and invaded Illinois; in 1868 it appeared in Indiana, and in 1870 in Ohio and the borders of Canada, in Pennsylvania, not far distant from NewYork, and finally in Massachussetss. In 1871 the district around Lake Michigan was overrun, a

also the Erie country; and doubtless all the surrounding regions will sooner or later suffer the depredations of this formidable plague, which fears no variations of temperature. It is morever to be feared that it may be conveyed to our shores; and once imported, it is impossible to estimate the mischief and misery it would cause.

The Colorado Beetle increases at a marvellous and serious rate, depositing its eggs several times during the year. Towards the end of April or in May, the female lays from 700 to 1200 eggs in clusters of 12 or 13 on the under side of the leaves. In 5 days the larvæ are hatched and prey upon the plants for a period of seventeen days, after which they burrow into the earth and are metamorphosed to the chrysalis stage, and at the expiration of fourteen days attain the perfect state. A new deposit of eggs follows, continuing to the third generation in the same year, the last wintering in the ground.

A field attacked by these insects is completely stripped in a few days. Various substances have been tried to fight this insidious enemy. One only, verdigris, has been found efficacious, and here the remedy is worse than the evil, as it is a virulent poison. The sole means of defence left is to collect and burn the Potato haulm as soon as the eggs are deposited.

The eggs of this *Chrysomela* may be known by their deep orange-yellow colour. The grub or caterpillar is at first of a dark nearly black colour, changing to a deep red with a slight shading of orange.

The perfect insect, or beetle itself, is oval in shape, about 6 lines long by 4 broad, and of a creamy yellow marked with ten longitudinal black stripes. It has been proved to attack not only the Potato, but likewise several other *Solanaceae*, as the Winter cherry, Love apple, Aubergine, etc. It is greatly to be desired that the European Governments should prohibit the importation of American Potatoes, which might bring with them this terrible pest. We have already more than enough of the " American Blight „, *(Aphis lanigera,)* the Vine Beetle, *(Phylloxera vastatrix,)* and other plagues involuntarily presented to us by our neighbours across the Atlantic. E. A.

MISCELLANEOUS.

THE COLOURS OF FLOWERS.

No art can possibly do justice to the refulgent tints found amongst flowering plants. It is not only in the flaming scarlets and crimsons that art fails, for it falls equally short in any attempt to exactly reproduce the most modest tints.

True it is, that one sees at exhibitions of oil and water-colour paintings, and in some magazines—as in the one we now write for—plants portrayed in which the colours seem refulgent enough; but if these copies from nature be placed side by side with nature itself, there is as much difference between the colour of the two as between harmony and discord in music.

The one thing artists can never perfectly get is transparency, and this difficulty is far more insurmountable in the illustrations for a journal like the *Floral Magazine*. It is as impossible to represent the opal like light as seen passing through the petals of some white Lilies as it would be to paint the rays of light playing about a diamond, or the blaze of fire from the sun itself. The best and purest scarlet colour used by artists, if placed by the side of petals of a field Poppy or scarlet Pelargonium, immediately looks like a piece of clay. The same with crimsons: our best crimson-lakes, when placed near the petals of some Geraniaceae, at once put on a liver-like appearance. Scarlets, in Nature, are transparent, and such a thing as a transparent scarlet pigment is unknown. Now if we glaze over one of our artificial scarlets with a wash of pure purple, the painting immediately looks like mud; but what is more common in some scarlet Orchids (as in *Masdevallia Veitchii)* than to see a vivid scarlet shot with brilliant purple? On an examination of the epidermal cells with a microscope, some of the mystery is explained, but any attempt at imitation inevitably ends in failure. The same remarks apply with equal truth to all other tints. — be they purple, blue, green, yellow or orange. It is in the experience of every artist that, on looking at some flower possessing brilliant coloration, the tint be at first took for scarlet, soon appears to him as scarlet-orange; when, on returning to the plant, it is crimson-scarlet, or a crimson possibly shot with some magenta hue. In every light flowers display new tints, new effects of light and shade, and new beauties, which the artist is indeed fortunate if he can at all catch. Yellows, as found in some Oncidiums, are very pure and lovely, and our chromes come nearest; but chromes are perfectly opaque, whilst the yellows in the Orchids are as perfectly transparent.

It is common for artists to fail in their tints of green, not because of their non-appreciation of the colour, but because no artificial greens can be found or compounded to properly match Nature. Some light coloured Roses are especially difficult; the petals do not appear of the same tint when detached from the flowers, and in matching the hue for imitation, the petals first appear rose, with a blush of transparent scarlet; then a suggestion of salmon colour shows itself or a glimmering of rosy-purple, which in theory seems impossible, but in Nature is a reality. These tints, without doubt, all exist in the flower itself, but no artist, except the Great Designer of all flowers, can perfectly reproduce them.

W. G. S. in " *Floral Magazine.* „

CHINESE AND JAPANESE LACQUER.

The secret of the composition of this substance has long defied the inquiries and investigations of Europeans. It is, however, not the only mystery that has baffled the ingenuity of our artists and manufacturers to avoid the enormous tribute we annually pay to the far East.

For a long time it was thought to be impossible to recognise the basis of the different sorts of lacquer so cleverly employed by the Chinese and Japanese in the embellishment of small ware, toys and furniture. We owe our knowledge that lacquer is a reddish resinous exudation obtained by incision from a tree called *Tsi-chou* to Roman Catholic Missionaries, and mainly to Father d'Incarville. This tree is the *Rhus vernicifera* of botanists, a member of a family rich in resin-producing species. It is indigenous in several provinces of China and Japan, and has even been found as far westward as Nepal.

In the preparation of the lacquer, the first process is to free the resin from its watery constituents, which is effected by exposure to the sun and frequent stirring with a wooden spatula.

Afterwards, the materials characterising the different kinds of varnish are mixed with it. The ordinary sort, or shining varnish *(Kouang-tsi)*, is a compound of the resin, pig's gall and vitriol. By adding to this pulverised charred bones of the stag, or ivory black, mixed with the volatile oil obtained from the tea plant, the beautiful black Japanese lacquer (*Yang-tsi*) is obtained. The white variety is manufactured from the common sort by adding silver-leaf; red by the addition of cinnabar, (sulphuret of mercury,) or safflower, *Carthamus tinctorius*; yellow by orpiment; green by orpiment and indigo; and violet by the mixture of a powdered stone called *tse-che*. Another rare and valuable varnish, the *Noa-kin-tsi*, furnishes the materials for the golden ornamentations on the fancy articles received from those countries.

Before applying the lacquer, the surface of the article to be lacquered is polished as smooth as it is possible to bring it, all cracks and depressions being carefully stopped with silk-tissue or paper, and then a coating of the oil of *Joug-chou*, *(Elaeococca vernicifera* or *Aleurites cordata)*, over which, when dry, the lacquer is spread. Two or three very thin coats still leave the grain of the wood visible. Increasing the number of coats the colour of the material is hidden, and a bright shining surface is obtained, upon which the silver ornamental design is painted, a final coat of varnish completing the work.

Another method of lacquering is by first covering the wood with a coating of paste compounded of paper, tow, whiting, etc. This preparation forms a firm close groundwork, upon which successive layers of lacquer are applied. A flat new hair pencil is used in laying on the lacquer, and this is done with greatest nicety, of an equal thickness all over, without streaks or ridges. The operators work in quite close rooms, and in order to avoid all dust, they wear nothing beyond their drawers where the work is carried on. The atmosphere is kept rather moist than not, and the temperature is varied according to nature of the work in hand. After each coat of lacquer the surface in rubbed down with a burnisher made of very fine brick-dust, pig's blood, tong-yeou oil, chalk water and a kind of earth called *tou-tse*. The last coat alone is not subjected to the process of rubbing down. The ornamentation of lacquered work is performed by special, and occasionally, very clever artists. The design is first of all sketched out in white-lead with a delicate pencil, and then the outlines are marked with a sharply pointed steel instrument, and the details afterwards filled in.

Frequently, too, the artist prepares his design separately on paper with Indian ink. A pupil going over the tracing with liquid orpiment, the sheet of paper is then applied to the lacquered surface leaving thereon an impress of the design. Removing the paper the imprint of the pattern is done over with orpiment and vermillion dissolved in gum water. The next process is to overlay the figures with *Noa-kin-tsi*, camphor varnish, which is a mordant intended to take golden shellac, which is laid on by means of a pad dipped in gold dust. The raised work finished with so much art, is effected by successive coatings of lacquer and gold dust.

The perfection to which this work is carried in its different processes in Japan, gives the products of this Empire a marked superiority over articles of Chinese manufacture, though the mode of work is exactly the same in both countries. This superiority dates centuries back, and is still maintained.

It is in the manufacture of the articles where the Japanese excel, and nothing should hinder us, now that we know the process, from trying competition with the clever artists of China and Japan.

E. A.

NOTICES OF NEW BOOKS.

Dictionnaire de Pomologie. — Les Pommes, Pomological Dictionary. Apples, by M. André Leroy. (1)

We have received the third and fourth volumes of the gigantic work devoted to Pomology by M. André Leroy.

The Apples form a monograph, if not of absolutely all the varieties cultivated in Europe and America, at least of all the principal and most desirable sorts. The idea, indeed, of such a vast undertaking is worthy of admiration, a task that the monks alone of the middle ages would have ventured to impose upon themselves. Every fruit has been grown by M. Leroy and described from fresh specimens. Each description of the 550 varieties admitted, embodies the following particulars: *Description of the tree*: Wood, shoots, lenticels, nodes, buds, leaves, petioles, stipules, productiveness and culture. *Description of the fruit*: Size, shape, stalk, eye, skin, flesh, juice, time of ripening, period of use and quality. Then follow *historical Notes and Observations*.

The historical portion is treated very fully and with great care and discrimination. Not a single detail observed by the author has been forgotten, and we are justified in saying

(1) Two large octavo volumes, 880 pages, including descriptions and figures of 550 varieties. To be had of the author and the principal booksellers.

that with the exception of a few inaccuracies, inevitable in a work of so great an extent, this part exhibits a perfect mastery of the subject. The synonomy, also, is a subject that has been treated at exhaustive length, the result of laborious and careful research, and which we cannot too strongly recommend to fruit-growers and nurserymen.

The Apple, the first amongst fruits to engage attention here below — to our sorrow, it appears — deserved the honour of such a work. The first mention of the appletree we find in the Song of Solomon; all other references belong to the region of fable. Indeed no version of the Old Testament contains anything more definite than the word *fruit* for the produce of the Tree of knowledge of good and evil. In translating it by the word " apple „ the author of the *Arboretum Biblicum*, Ursinus, could not resist making the following play upon words: *E malo nascitur omne malum* (1) which is little better than that which we learn at school: *Malo malum cum malo quam malum sine malo* (2).

After an examination of the antagonistic opinions of various authors, M. Leroy comes to the conclusion that the apple tree is indigenous in the forests both of Europe and Asia, and not in Asia alone, as contended by M. Koch in his Dendrologie.

The varieties cultivated by the Greeks were not very numerous. Homer and other writers barely mention them. Theophrastus points out 6 sorts, namely *Agrestal*, *Urban*, *Spring*, *Melimelums*, *Epirotics*, and *Serotines*. Theocritus only mentions the *Dionysians*; and Dioscorides adds nothing to this list.

The Romans possessed greater variety, as many as 26 kinds being indicated by Cato, Varro, Columello and Pliny. They are: *Malum musteum*, *orbiculatum*, *biferum*, *Scandianum*, *Matianum*, *Pelusianum*, *Americanum*, *Syricum*, *Sextianum*, *Manlianum*, *Appianum*, *Sceptianum*, *Petisium*, *Graeculum*, *gemellum*, *Melapium*, *Melimelum*, *Epiroticum*, *Orthomastium*, *spadonium*, *Melofolium*, *Pannuceum*, *pulmoneum*, *sanguineum*, *silvestrium* and *farineum*.

Then comes the decline of the Roman Empire, and the darkest cloud spread over the arts and sciences in the capital of the world.

We find nothing more concerning the apple till the sixteenth century, in the work of an Italian, Agostino Gallo (1540), who enumerates only 12 varieties.

In France, starting from the eighth century, the monks of Charlemagne give seven varieties as growing in his orchards. Very soon apple trees spread all over Normandy, but the handsomest and best sorts still maintained a high price. From the year 1200 to 1498 we find 32 varieties enumerated and more or less completely described. From Louis XII (1498) to Louis XIII, Charles Estienne catalogues 11 apples (1540); Jean Bauhin (1598 to 1613) gives 18; Olivier de Serres (1600) augments the number to 32, and le Lectier's list includes 35 names.

In more recent times the number of sorts has rapidly increased. La Quintyne, who was no great friend of apples, displays his aversion to them and his love for the country where they most abounded in his celebrated *Instructions* (1690). Twenty years before this date, Dom Claude Saint-Etienne published a list of 153 varieties; but he does not appear to have had many imitators, for all subsequent authors give a much smaller number. We must pass on to Pierre Leroy d'Angers (1790) for a list embracing as many as 163 varieties.

The third period, dating from the French Revolution, is quite the reverse, showing a rapid increase in the number and improvement in the quality of cultivated apples. M. A. Bivort, 1847-1860, describes 116 varieties; M. Mas, in 1873, reaches to 104, and the *Dictionnaire de Pomologie* of M. A. Leroy includes 550 varieties with 1880 synonymes. But a line must be drawn somewhere, and we are amongst those who will congratulate M. Leroy upon his having halted on the right side of tediousness.

The chapters devoted to the cultivation, propagation, etc., of the apple are carefully written and replete with valuable information, the result of patient and deep study.

To sum up briefly, M. Leroy has presented us with a valuable and useful book, one which speaks favourably for the advance of Arboriculture and Pomology, and one which does honour to its author.

E. A.

(1) The apple was the mother of all evil.

(2) I prefer an apple-tree with an apple to an apple-tree without an apple.

Notice respecting volumes I and II of the Dictionnaire de Pomology.

The question of synonomy being of the utmost importance to Pomologists we direct the attention of the possessors of the preceding volumes of this work devoted to the Pears, to the following notice which we have received from M. Leroy.

" Since the publication of my *Histoire du Poirier*, forming the two first volumes of the *Dictionnaire de Pomologie*, the continued study of the various sorts in my nurseries has enabled me to establish the identity of the following varieties, previously regarded as distinct:

1 Abbé Perez has proved to be the same as	Virgouleuse.
2 Angobert.	Mansuette Double.
3 Arbre courbé.	Amiral.
4 Bergamote de Bugey.	Bergamote de Pâques.
5 Beurré Caty.	Orpheline d'Enghien.
6 Bonne de Soulers.	Bergamote de Pâques.
7 Colmar Charni.	Léon Leclerc Epineux.
8 Doyenné Louis.	Doyenné de Saumur.
9 Doyenné Sentelet.	Doyenné Commun.
10 Duc de la Force.	Bellissime d'Hiver.
11 Duchesse de Brabant.	Soldat-Laboureur.
12 Henri Bouet.	Doyenné commun.
13 Saint Augustin.	Vernusson.

„ Not to be misunderstood, I may add that I do not pretend to say that all the Pears above mentioned should be classed as synonymes, but simply that those I have received under these names were already in my collection bearing different names. „

A. Leroy.

HORTICULTURAL CHRONICLE.

May, 1874.

— The Exhibition at Florence. — As we are writing this we are just upon the point of starting for Florence from whence our next communication will be dated. The influx of strangers to the " City of Flowers „ is already very great, and this grand Exhibition is assuming all the attractions of a great national festival. Our note-books will rapidly fill, and we hope to lay their contents before our readers in our next issue. There is no doubt that Horticulture has made great progress in Italy during the last few years, the extent of which, we in the more northern regions are, to a certain degree, ignorant. The time has gone past when the Italian market gardeners, according to the anecdote of Alphonse Karr, threw their cauliflower plants into holes in the ground and saw no more of them for three months afterwards, when they went to cut them. A hasty run through Italy during the past winter has convinced us of the existence of great improvements in cultivation and an increase of amateurs cultivators. The Exhibition of Florence will unfold to our view the results of this forward step.

— Spermacoce hispida and the Baobab. — We have lately received a letter from M. Contest-Lacour, our correspondent at Pondicherry, from whick we make the following extracts :

" A careful analysis and trial of the seed of *Spermacoce hispida* prove it to contain very similar properties to those of the coffee. I send you some seed, and with it a quantity of the woody fibre of the Baobab *(Adansonia digitata)*, which will, I think, be useful in the manufacture of paper. These qualities need confirmation from the experiments of competent men, for the discovery would be of the inestimable value in the colonies, Senegal, for instance, where immense tracts of waste land might be profitably cultivated, etc. „

We shall examine the objects forwarded by M. Contest-Lacour with great interest. The confirmation of his anticipations would, indeed, be of importance, and we shall soon know what to think in the matter.

— Lilium auratum with double flowers. — Last year, the Lily Royal of Japan shewed a curious duplification in the garden of M. Boisgiraud, an amateur at Tours. The Horticultural Journals chronicled the fact, which, according to M. Krelage of Haarlem, is neither new nor rare. In the *Gardeners' Chronicle* for 1865 there is an account of a semi-double and also of a completely double-variety. And in 1866 the same Journal mentions another instance of the same kind. Moreover several other species of *Lilium* are known as having presented the same phenomenon.

— Temporary harmlessness of Nettles. — M. Duchartre has received a letter from M. Naudin of Collioures (Eastern-Pyrenees) in which the learned member of the Institute communicates an interesting observation made by himself, after a very violent storm of wind of 24 hour's duration, when all the Nettles in the country around had lost the power of stinging. They were handled with impunity, not the least sensation of stinging being felt. By degrees, however, they regained their unpleasant property. At a recent meeting of the *Société centrale d'Horticulture*, M. Duchartre made the fact known, and added, by way of explanation, that the wind had the effect of rendering the normally rigid hairs flaccid, and thus preventing them from being able to penetrate the skin, which precedes the injection of the acrid fluid. Hence this phenomenon is more natural than it appeared at the first outset, and there is probably some degree of truth in the information so kindly tendered by knowing school boys to their less experienced companions, that " Nettles don't sting this month. „

— Leicester Annual Horticultural Exhibition. — This show will be held on the Race Course on Wednesday and Thursday, July 1 and 2.

— Poisoning by Puff-balls. — From the *Scotsman* we learn that another case of severe illness, consequent upon taking this fungus in too old a state, has occurred. While preparing a lecture for the Pharmaceutical Society on edible and poisonous Fungi, M^r^ Sadler accidentally swallowed a quantity of the spores of a large species of Puff-ball (*Lycoperdon giganteum*), and within the space of an hour and a half he was seized with severe illness, accompanied with violent pains. The violent symptoms could not be subdued until nine days after the first attack, by which time the patient was much weakened. Sir Robert Christison, Bart., D^r^ Balfour, and D^r^ William Craig, who have attended M^r^ Sadler, are of opinion that the continued irritation was kept up by the fungus spores. At the date upon which the preceding paragraph was written (April 30) M^r^ Sadler was still confined to his bed.

This fungus is only fit to eat when quite young, and in that state it is affirmed by those who indulge in these somewhat doubtful and treacherous delicacies, to be one of the best, if not the very best flavoured of the edible fungi, and perfectly harmless.

— Leeds Horticultural Society : — The eleventh Exhibition of this Society will be held in the Horticultural Gardens on June 10, 11, and 12.

The effects of the late Frosts on Vegetation. — The accounts received from different parts of the country, and our own observations, show that the repeated sharp frosts have done a vast amount of injury, not only to the fruit crops, the extent of which in many cases cannot be correctly estimated at present, but they have also destroyed the beauty of ornamental trees and shrubs in many localities. And in some of the more favoured spots, that is to say, more favoured in ordinary seasons, the havoc has been greater in proportion to the more advanced state of vegetation. Not merely tender exotic plants have suffered, but numerous trees and herbaceous plants belonging to the native flora. Without a great deal of labour many " ornamental „ shrubs will afford anything but a pleasing sight

for several weeks to come. The common oak at the present time (May 20) is quite black in some places whilst in other localities not far distant it is full of foliage with young shoots from 6-12 inches. All the first flowers of the strawberry exhibit only too pronimently their " black eyes ". Vegetation being in advance of ordinary seasons has suffered to an unusual extent. The mean temperature of the greater part of February and March and the first half of April was considerably above the average, whereas since the middle of April it has been almost daily below the average, and during the past fortnight no less than 5°5, according to Mr Glaisher's observations at Blackheath.

— Puccinia malvacearum. — Last year, this microscopic parasitical fungus, whose appearance we were the first to announce, was reported from a few scattered localities in England; but this season it has already spread very widely, and threatens the whole of the mallow tribe. We call attention to this fact in order to put our readers on the alert in time to save their Hollyhocks and other Malvaceous flowering plants, by the application of flowers of sulphur, or some other remedy, if this should prove ineffectual.

— Californian Pears. — In the number of the *Gardeners' Chronicle* for April 25, there is a representation of a branch of a Pear-tree, bearing an altogether extraordinary number of fruit. The branch in question was about five feet long, and bore at one time 203 pears, many of which measured six inches in length. The name of the variety is not given. The figure was taken from a photograph. The branch and fruit weighed together 85 pounds, and originally 265 pears were counted, sixty-two having fallen off in transit. This extraordinarily fertile branch was produced last autumn in M. Kercheval's garden, on the Sacramento river, in California.

— Rhone irrigation canal. — When summarising the work of M. Sahut on the treatment of vines infested with *Phylloxera* in our last issue, we mentioned that the only really efficacious remedy hitherto known, is flooding the vineyard. This remedy, of course, is impracticable in the majority of cases, very few vineyards being so situated as to admit of submersion. We learn with pleasure that a scheme, originating with M. Dumont, is under consideration, having received the approval of the *Conseil général des Ponts et Chaussées*. This project is to construct a canal, by means of which the vineyards in the departments of the Isère, Drôme, Vaucluse, Gard and Hérault might be irrigated with water obtained from the Rhône. It is hoped that an act empowering the promoters to carry out their plan will be passed this year, and the works begun next year. The time required to complete the works is estimated at five years. In this way 656,000 hectares (about 1,619,000 acres) will be brought under irrigation, the greater part of which is infested with the vine beetle. The canal would cost one hundred million francs (£ 400,000) and raise the value of the land by five hundred millions (£ 20,000,000). A change of climate would be brought about by this diversion of the waters, causing rain to fall where now there is little, just as has happened with the Marseilles canal and also the Suez canal. The speedy realisation of this vast undertaking commands our best wishes.

— Anthurium Scherzerianum Williamsii. — This plant is the long-looked-for white flowered variety of *A. Scherzerianum*, at length obtained by M. Williams, the noted florist of Upper Holloway, who exhibited a specimen of it at one of the recent meetings of the Royal Horticultural Society of London. The spathes are almost entirely white, and the curled spadices are pale yellow; in every other respect it is like the type.

M. André Devos. — Thanks to the zeal of professor Ed. Morren, the botanical collections of the University of Liége have been considerably augmented within the last few years, and they were specially enriched in 1867 by the addition of numerous products from the Paris Exhibition. Such being the case, a curator become needful; and we are glad to learn that the post has been given to M. André Devos, a distinguished botanist, and associated with M. Morren in the *Éphémérides Botaniques*, recently noticed.

— The International Exhibition at Florence. — We are finishing this chronicle from the " City of Flowers ", and on the same day even as the Exhibition is opened.

This horticultural ceremony, a new thing for Italy, was organised, as we have already stated, by a committee of botanists and other notabilities, placed at the head of whom was Professor Parlatore, and ably supported by his hard-working secretaries, Signori d'Ancona and Fenzi. Unfortunately, Prof. Parlatore was unable to enjoy the perfect success that crowned the work to which he had devoted such unceasing labours. Illness overtook him at the moment of triumph. When we visited him in his sick-chamber on our arrival at Florence, he remarked that he had broken down under the burden before the completion of his task, but it gave him great pleasure to know that the undertaking was successful. The King of Italy recognised his valuable services, and conferred upon him the honour of a Commander's Cross of the Order of the Crown of Italy, a distinction that was universally popular.

The Exhibition was located in the beautiful building recently erected by the municipality of Florence for the central market, built from the designs of M. Mengoni the architect of the famous Victor Emmanuel Gallery, Milan.

The opening ceremonial took place on May 11, in the presence of the King and a large and brilliant assemblage of the most fashionable society of Florence; the delegates from the various Governments and Societies being presented to His Majesty.

The following day the labours of the judges commenced, and took no less than three days to bring to a conclusion.

On Friday, the 15, the first meeting of the Congress was holden in the grand edifice of the Royal Society of Natural History, which had been recently re-decorated for the occasion, and where strangers had an opportunity of seeing the admirable arrangement of the botanical collections, carried out with so much skill and industry by Professor Parlatore. We shall return to this interesting subject in our report of the exhibition, which will be found on another page.

Meanwhile, we have much pleasure in testifying to the perfect success of the undertaking, and the gratifying results attending this latest assemblage of botanists from all countries.

E. A.

L'Illustration Horticole.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

PL. CLXVIII.

CAMELLIA PIETRO BOUTOURLIN.

NAT. ORD. TERNSTROEMIACEAE.

ETYMOLOGY : Dedicated to the memory of Father Camelli, a jesuit missionary who visited Japan, and was one of the introducers of *Camellia Japonica*, in 1739.

GENERIC CHARACTER : (¹) *Sepala* 5-6 inaequalia, a bracteolis ad petala subgradatim aucta. *Petala* basi breviter cohaerentia valde imbricata. *Stamina* indefinita, exteriora pluriseriata, breviter vel fere ad apicem monadelpha et petalis basi adhaerentia, interiora 5-12 libera; antherae versatiles. *Ovarium* 3-5 loculare; styli fere a basi liberi vel plus minus coaliti; ovula in loculis 4-5 pendula. *Capsula* lignosa, saepius brevis et acutiuscula, loculicide dehiscens. *Semina* in loculis saepius solitaria, crassiuscula, exalata; albumen nullum; embryo rectus, cotyledonibus crassis, radicula brevi supera. *Arbores vel frutices. Folia sempervirentia et coriacea vel membranacea, serrata. Flores axillares, solitarii vel aggregati, sessiles vel breviter pedicellati, saepe speciosi. Species ad 14, in Asia tropica vel orientali vel in archipelago Indico crescentes.* — Bentham et Hooker genera Plantarum 1, p. 187.

SPECIFIC CHARACTER : *C. Japonica*, arborea, ramis petiolisque glabris, foliis ovatis vel ovato oblongis, acutis vel acuminatis, subtus subaveniis, floribus inodoris, petalis (rubris, albis, flavidis, variegatisve) rotundatis emarginatis (vel in var. hortens. fimbriatis) staminibus, ovariis, stylis connatis capsulisque glabris. *Seemann*, *Linnaean Transactions*, XXII, 341.

The description of the species is limited to its differential characters as distinguished from those of *C. Hongkongensis*, Seem., etc.

Speaking of the distribution of *C. Japonica*, Seemann says that it is not known in a wild state in China, though it has been cultivated from time immemorial by the Chinese. On the other hand, it is common throughout Japan. The *C. Hongkongensis* of Seemann is very near *C. Japonica*, differing mainly in having free styles and a woolly ovary. Besides the two species mentioned, the genus, as limited by Seemann and others, would comprise only four others, one of which is little known. *C. reticulata*, Lindley, including *C. spectabilis*, Champion, is distinguished by its pubescent young shoots and the distinct reticulation of the venation of the under surface, especially, of the leaves. The form originally named by Lindley, and figured in the *Botanical Register*, t. 1078, has semi-double, red flowers, with large wavy petals, resembling a Pœony rather than the compact flowers of the varieties of *C. Japonica*. The plant named *C. spectabilis* has single white flowers in the normal state. Both *C. sasanqua* and *C. drupifera* are smaller-flowered, and of more rambling habit. The latter has fragrant flowers.

There are many handsome varieties of these species cultivated by the Chinese, but few of them are found, and those very rarely, in European gardens. Many of the varieties figured and referred to *C. sasanqua*, belong to *Thea maliflora*, Seem. which includes *Camellia maliflora*, Lindley and *C. rosaeflora*, Hooker. Since the publication of Seemann's synopsis of the genera further material has been accumulated in gardens and herbaria; and we intend returning to a more detailed consideration of the species shortly.

W. B. H.

(¹) The above generic character includes the genus *Thea*, of which Messrs Bentham and Hooker, l. c., say : « olim a Camellia characteribus fallacibus distincta, nuper a Seemannio (Linnaean Society's Transactions, XXII, 340) limitibus certioribus definita, nempe staminibus interioribus liberis numero petalis aequalibus nec duplo pluribus, nobis pro sectione habenda, nam genus (docentibus Griffithio aliisque) in integrum servatum magis naturale videtur. „ In Dr Seemann's synopsis here referred to he would distinguish the two genera as follows :

CAMELLIA, L.	THEA, *Kaempf.*
Calyx polyphyllus, sepalis deciduis. Stamina interiora duplo petalorum numero. Styli 5 (abortu 4 v. 3). — Flores sessiles, erecti.	Calyx bracteatus, 5 sepalus, sepalis persistentibus. Stamina interiora petalorum numero aequalia. Styli 3. — Flores pedunculati, declinati.

PRITCHARDIA GRANDIS.

When writing in a recent number of the beautiful plant described by Seemann under the name of *Pritchardia pacifica*, we took occasion to call attention to some new species of later introduction; and we more particularly alluded to a very fine species actually in the possession of M. Linden, which we shall publish in due course. M. de la Devansaye, a French amateur, had an idea that it was the same plant as that lately introduced by M. W. Bull under the name of *P. grandis*. But this is certainly not the one we had in view, though of sufficient interest to justify us in dwelling upon it for an instant.

Pritchardia grandis, figured in the *Gardeners' Chronicle* of March 28, is a native of the Southern Archipelago. Mr. Bulls' specimen is about three feet high. The stem appears somewhat angular and is clothed with a fibrous net-work. The leaves, including the petiole, are about two feet long, with an almost orbicular blade, truncate at the base.

The venation is palmate, and the blade is divided almost all round into oblong narrow emarginate lobes. The colour of the glabrous foliage is a beautiful bright green, paler below. When young, the leaves are flat, but eventually convex. The petioles are covered with slight prickles. *P. grandis* is of regular habit and hardy appearance, and if more plants of it can be procured it will doubtless be one of the finest ornaments of our stoves.

E. A.

PL. CLXIX.

GEONOMA GRACILIS, LINDEN & ANDRÉ.

SLENDER GEONOMA.

NAT. ORD. PALMACEAE.

ETYMOLOGY : from γεωνομος, skilled in husbandry.

GENERIC CHARACTER : See Endlicher, *Genera Plant.*, N° 1751.

SPECIFIC CHARACTER : habitus *Cocotis Weddellianae*, glabra; *squamulae* brunneo-nitidae caducae in toto planta sparsae; *vaginae* basilares scisso-retiformes apice annulato-truncatae; *rachis* gracilis 50 cent. longus (et ultra), erecto-decurvatus, basi subtus teres, supra complanatus, in costam triangulatam supra bisulcatam inter pinnas productus; *pinnae* alternae disticae, remotae, 25-30 cent. longae, 2 cent. latae, lineari-acutae, eleganter recurvatae, marginibus subdeflexis, nervis-3 supra exsertis, pinnis 2 ultimis conjugatis; *flores*.... desunt. In Brasilia orientali primum a cl. Riedel lecta, postea a cl. Binot in Europam missa, circiter ann. 1873. — Ad vivum descripsi in horto Lindeniano. — E. A.

Geonoma gracilis, Linden et André, in Lind. Catal. 1874.

— **Riedeliana**, H. Wendland, mss.

This delightful little Palm is a native of Brazil, and dried specimens of it were received from M. Riedel several years ago by M. Wendland of Herrenhausen, Hanover. Subsequently, the plant was found in eastern Brazil, and M. Linden obtained the first living specimens last year, through M. Binot. In habit it shows a striking resemblance to *Cocos Weddeliana (Glaziova elegantissima)*. We hesitated about naming this pretty species, which had escaped Martius and other Palmologists, until we met with the learned Hanoverian botanist, M. Wendland, at the Florence Exhibition, the other day, who informed us that the plant was known to him, and that he had given it the provisional name of *Geonoma Riedeliana*, but had not yet published it. There is, therefore, no cause why we should not retain the name originally intended for it by us, and in this, we are pleased to say, we have the perfect concurrence of M. Wendland.

The plant has not yet produced flowers under cultivation; and any further description in English would be a useless addition to M. Pannemaeker's very faithful illustration. Amongst the small Palms so much esteemed in England for table decoration, there is none, perhaps, that will gain so many admirers as this extremely elegant species, whose foliage is of a beautiful dark green, and whose culture is of the easiest. The plant from which our description was taken is still young, and about three feet high, and formed one of the collection of twenty-five new Palms exhibited by M. Linden at the recent Exhibition in Florence, which gained the first prize. E. A.

POMOLOGICAL CONGRESS AT VIENNA.

FRUITS ADMITTED IN 1873.

Upon the occasion of the Universal Exhibition at Vienna, the Pomological and Œnological Congress assembled in that city, at the beginning of last October, and held three meetings under the presidency of M. Lucas, director of the Pomological Institute of Reutlingen, Wurtemberg. This gathering included no fewer than 172 affiliated members, and the number of papers presented was considerable. They have been published in full in the *Monatshefte für Obst-und Weinbau*, conducted by Dr Lucas.

Amongst other interesting matter, we find the following lists of pears and apples chosen by the congress. They will be useful for comparison with the selections made by other bodies.

PEARS.

1. Souvenir du Congrès; *August-September.*
2. Seigneur Esperen; *September-October.*
3. Fondante des Bois; *September-October.*
4. Beurré Hardy; *September-October.*
5. Dechant; *October-November.*
6. Beurré Capiaumont; *October.*
7. Marie Louise; *October.*
8. Beurré Superfin; *October.*
9. Louise Bonne d'Avranches; *October.*
10. Duchesse d'Angoulême; *October.*
11. Colmar d'Aremberg; *October-November.*
12. Soldat Laboureur; *October-November.*
13. Beurré de Grumkow; *October-November.*
14. Conseiller à la Cour; *October-November.*
15. Nouveau Poiteau; *October-November.*
16. Passe Colmar; *November-December.*
17. Bonne de Malines; *December.*
18. Beurré Rance; *January-March.*
19. Beurré Sterckmans; *January-March.*
20. Joséphine de Malines; *January-March.*

APPLES.

1. Charlamowski; *August.*
2. Summer Pearmain; *September-October.*
3. D'Automne Cludius; *end September-October.*
4. Schwarzenbach Pearmain; *September-October.*
5. Langton Nonpareil; *end September middle October.*
6. Scarlet Pearmain; *October-November.*
7. Reinette de Burchard; *October-December.*
8. Noble Jaune; *November-January.*
9. Reinette Jaune de Blenheim; *November-March.*
10. Wagener; *November-December.*
11. Reinette Harbert; *December.*
12. Reinette d'Orléans; *December-March-April.*
13. Beaufin Panaché; *December-March.*
14. Ribston Pippin; *December-April.*
15. Reinette grise de Canada; *December-April-May.*
16. Reinette d'Oberdieck; *January-May.*
17. Court-pendu Royal; *January-May.*
18. Reinette Baumann; *January-June.*
19. Reinette de Champagne; *March-June.*
20. Wellington; *May-June.*

L'Illustration Horticole.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

L'ILLUSTRATION HORTICOLE.

J. Linden, publ.

PL. CLXX.

ODONTOGLOSSUM BREVIFOLIUM. LINDLEY.

NAT. ORD. ORCHIDACEAE.

ETYMOLOGY: from ὀδους, οντος, a tooth, and γλοσσα, a tongue, in allusion to the tooth-like appendages usually present at the base of the lip.

GENERIC CHARACTER: *Perianthium* explanatum aequale; *sepalis petalisque* angustis acuminatis liberis. *Labellum* indivisum ecalcaratum planum unguiculatum ascendens, ungue cum basi columnae continuo, limbo reflexo diviso dentato apice angustato. basi concavum crista bilamellata raro fimbriata saepius antice bidentata auctum. *Columna* elongata apice auriculata aut aptera. *Anthera* bilocularis. *Pollinia* solida, caudicula lineari, glandula hamata. — *Herbae epiphytae pseudobulbiferae. Folia plicata. Scapus terminalis vaginatus. Flores speciosi.* Kunth et Lindley.

SPECIFIC CHARACTER: *folia* ovato-oblonga patentia; *scapus* simplex; *bracteae* oblongae membranaceae pedicellorum longitudine; *sepala* subrotunda unguiculata undulata, *petalis* paullo minora; *labellum* unguiculatum auriculatum cuneatum emarginatum sepalis brevius basi tuberculis verrucosis 5 et appendice parva antica 3 dentata auctum; *clinandrium* serratum in marginem membranaceam alaeformem decurrens. — In Cordilliera peruviana prope Loxa.

Odontoglossum brevifolium, Lindley, in Benth. *Plant. Hartweg.*, p. 152.

This pretty little species is a native of the Peruvian Andes, in the neighbourhood of Loxa, and was described by Lindley from specimens collected by Hartweg. It is highly remarkable for the shortness of the solitary leaf surmounting the oval oblong flattened pseudobulb.

Scape simple, furnished with oblong membranaceous bracts, equal to the pedicels in length. Flowers rather large, often nearly two inches in diameter, about a dozen or sometimes even more borne on each scape. The sepals, or outer divisions of the perianth, are rounded, wavy and narrowed into a claw; and the petals, though of the same shape, are a little larger. The cuneate emarginate labellum is clawed and auricled, shorter than the sepals and provided at the base with five warty tubercles and a three-toothed appendage in front of them. The column is serrated and bearing marginal membranous wings.

We saw this little-known species in flower in M. Linden's establishment. It worthily deserves a place in this already numerous genus of lovely cool-house Orchids.

E. A.

BEGONIELLA OLIVER, A NEW GENUS OF BEGONIACEAE. — A new genus of this family, and, apparently, a very distinct one, from a country so well known comparatively as New Granada is, to say the least, rather unexpected. At the same time it furnishes a strong proof that many interesting types of very narrowly circumscribed distribution may still remain undiscovered. The plant in question was found by R. B. White, Esq., in a new path through the forests of the Atrato valley, at a point about thirty miles due east of the town of Quibdo, on the Atrato river. Its habitat is at an elevation of 500 feet above the sea level, in the region of perpetual moisture, where the mean temperature is 84° Fahrenheit. The plant was sent to Dr Hooker, and described and figured by Prof. Oliver in the *Transactions of the Linnaean Society*, vol. XXVIII. In many points of structure it agrees with *Begonia* but differs essentially in the gamophyllous perianth of the male flowers, and in having the divisions of the perianth of the female flowers united above the ovary forming a cup-shaped or campanulate continuation of the adherent (?) floral envelop. In all previously known *Begoniaceae*, the divisions of the perianth are free to the base in the male flowers, and in the female flowers they are not united above the ovary. The stamens in *Begoniella* are four in number, monadelphous and didynamous, and the stigmas are multifid. Judging from Mr White's description, it must be equally as attractive from an ornamental point of view, as it is interesting in structure; and its early introduction into our gardens we hope to see realised. The following memorandum respecting the appearance of the plant in a fresh state accompained the dried specimens forwarded by Mr White to Dr Hooker: " The plant grows from nine to eighteen inches high in stony wet places; and the velvety leaves, dark green above and rich purplish crimson below, when wet, as they always are, throw into brilliant relief the bright scarlet spikes of flowers, or, when the underside of the leaves is seen, forms an harmonious mass of colour, which tones down the glaring contrast of scarlet and green. „ To complete the portrait of the species, *B. Whitei*, Oliver, we conclude with a few extracts from Professor Oliver's description; Stem erect papillose and bristly. Leaves alternate oblong-elliptical acuminate, oblique at the base irregularly crenate-serrate, clothed with scaly bristles, 2 to 4 inches long. petioles 1 to 4 lines long. Flowers in axillary several-flowered bracteate racemes; bracts large distichous membranous ovate oblong boat-shaped coloured.

W. B. H.

TREATMENT OF VINES INFESTED WITH PHYLLOXERA.

Although it hardly comes within the province of our Chronicle to follow the history of the formidable insect scourge called Phylloxera, the interest in all that appertains to it is so universal, that we think it desirable to say a few words respecting a pamphlet on this subject, by M. F. Sahut of Montpellier.

The spread of this pest is progressive in the south. Up till 1868, it was almost confined to the Vaucluse, appearing here and there only in the Var and the Bouches-du-Rhône. It was in this year that Messrs. Planchon, Sahut and Bazille discovered it for the first time in the vineyards of Lagoy, Bouches-du-Rhône.

In 1869, it was found in the department of Gard, in 1870, in Hérault, and in 1872, more than thirty communes of the latter department were attacked by this plague. In the vicinity of Montpellier, the drought of last Autumn greatly favoured its propagation, for it has been ascertained that the Autumn rains check its multiplication, which amounts to millions of individuals from one family in one season.

In the face of this alarming rate of increase, many people have set their heads to work to discover an antidote, hundreds of which have been proposed; but not one, however, that has produced the desired effect. The application of sulphide of carbon has of late been greatly extolled, but unfortunately it has not fulfilled all the expectations it raised.

The only and solely efficacious treatment yet carried into practice, is submersion or inundation of the vineyard for a considerable period, as effected by M. Faucon, of Fabre, near Graveson (Bouches-du-Rhône). By diverting the stream of the Durance, M. Faucon was able to inundate successively different parts of his vineyard, leaving each part under water for a month, thus drowning the insect. But it is necessary that we should add that this treatment has been supplemented by liberal dressings of strong manures, and every other precaution that could be taken, and therefore the restoration of M. Faucon's vineyard must not be attributed altogether to the effect of submersion.

The Minister of Agriculture having appointed a commission to test the efficacy of the various remedies proposed, Messrs. Durand and Jeannot, professors at the agricultural college of Montpellier, conducted the trials with great zeal and perseverance.

Not one of the antidotes recommended proved really effectual, their assumed powers being invalidated, either from the difficulty of applying them to the roots of the vine, from the chemical decomposition they suffered, or their injurious action upon the plant itself. Carbolic acid, Juniper oil, sulphide of arsenic, arsenious acid, arseniated potash, nux vomica, tobacco, various preparations of naptha, sulphide of calcium, sulphide of mercury, essence of quinine, etc., have been successively tried, without any satisfactory result being obtained. Messrs. Monestier, Lautaud and Dortoman, the promoters of the sulphide of carbon remedy, originated the idea of introducing the liquid by means of stake holes to a depth of about a yard, from whence it should reach the rootlets by volatilization. This method of applying it is rendered easier by the use of the tubular stake, invented by M. Gervais-Mion of Montpellier, or Vicat's borer; but these implements are not sufficiently perfected to be pratical.

Various other equally ineffective experiments have been tried, as a composition of flowers of sulphur, corrosive sublimate, calomel and sulphide of potassium, infusions of the leaves of the Walnut and Elder trees, washing over with lime and tar, watering with sea-water, growing *Madia sativa* amongst the canes, and applying the insecticides of Peyrat, Chermet and Rafel. Neither of these preparations or operations was of any avail. We forbear saying anything about those that actually kill the vine, such, for instance as paraffin, essence of terebenthine, etc.

Nevertheless, some of the means employed have laid the foundation, as it were, of successful treatment, and should be noticed. They are all based upon the action of some kind of manure, mixed with some substance more or less fatal to insect life. As many as seventeen compositions have been put forward, the productions of Messrs. Andoque, Faucon, Villemur, Olivier, Brô, Rainaud, Rogier, Legal, Menard and Sabatier, Delerue, Goirau, Allier, Riste, Evenopoel, Grangier and two members of the commission. The effect of these remedies has in no instance been to destroy the insect, but by giving increased vigour to the vine they enable it to struggle against the adverse influence. To a certain extent, the insect may be held in check by frequent manuring, forking the soil and repeated sulphuring, in short by high cultivation. It is also recommended not to permit cattle to roam amongst the vines after the vintage, and especially to prune late. By thus paying more attention to the culture of the vine we may venture to hope that the plague will disappear of itself, in the same manner as the *Galeruca* that preyed on the Elm, the Vine *Pyralis*, the locusts of Algeria and other injurious insects.

In conclusion, we may recommend laying the whole of a vineyard, where practicable, under water, in October or November, by a temporary diversion of small streams. And in the second place, liberal use of strong manures and frequent tillage. The best kind of manures, according to M. Sahut, are : first, from twelve to eighteen pounds of farm-yard dung with from three and a half to seven ounces of the sulphide of potassium to each cane; second, the sulphuretted mud from the lake of Berre, mixed with rape cake, at the rate of 10 to 18 ounces per cane; third, gingelly oil or castor oil cake, 18 to 36 ounces per cane; fourth, soot 18 to 36 ounces to each cane. From three and a half to seven ounces of sulphur may be added to the manure for each plant. Cows' urine and human urine are very stimulating, but they should be sparingly and cautiously used. If the leaves remain yellow, three and a half ounces of the sulphate of iron dissolved in water might be given to each cane. It is also desirable to change the manure from time to time.

In conclusion, we may remark that M. Planchon's proposed plan of introducing a new stock from America should be very sparingly adopted, as it has already given rise to speculation, and the importation of an immense quantity of vines unsuitable for wine-making. E. A.

ROSE HEDGES IN THE SOUTH OF FRANCE, ETC.

On our last excursion from Marseilles to Genoa, we were greatly struck, as any one seeing them for the first time would be, with the magnificence of the Roses all along the Mediterranean shores. The *Rose Hedges*, and the *espalier Roses*, especially, offer an indescribably gorgeous sight. Under the genial influence of the warm sun of Provence, from the *Corniche* to the extremity of the *Riviera di Ponente*, that is as far as the gulf of Genoa, and protected to the north by the mountains, which gradually slope down to the sea coast, Roses attain the size of Pœonies, and develop a depth and brilliancy of colour and a richness of fragrance of unusual intensity.

But this is in part due to another cause, or rather two other causes, which lead to the same result, the main point being the choice of suitable subjects for stocks to graft upon.

These stocks are, *Rosa Banksiæ* and *Rosa Indica major.*

The Banksian Rose presents three varieties, namely, *White Banksian*, producing a profusion of small white flowers, scarcely so large as those of the double flowered Cherry, and of a most delicious fragrance; *Yellow Banksian*, with still larger clusters of small, nankeen-yellow, scentless flowers; *Chinese thorny Banksian*, flowers less numerous and about three times as large as in the two preceding, and of the most grateful odour. These three forms attain an unsurpassable vigour in this region. In two years, one plant will cover an immense wall, the gable of a house, or climb to the top of a tall tree, from which its branches hang like flowery cascades, embalming the air around with a rich perfume during the months of April and May. Now, if these be taken for stocks upon which to bud some of the choicer *Teas*, *Noisettes* and *Bourbons*, the growth of the latter will be prodigious. The stock should be two years old, having well ripened, though still smooth, wood. In this way such varieties as *Gloire de Dijon*, *Maréchal Niel*, *Lamarque*, *Safrano*, *Chromatella*, *Aimé Vibert*, *le Pactole*, and all the Teas, attain such dimensions as to be no longer recognisable.

Rosa Indica major is almost naturalised throughout the whole of this region. It possesses the additional claim to favour of flowering nearly all the winter, forming beautiful hedges of dark green shining foliage, from which thousands of clusters of lovely flowers rise, of a tender delicate transparent pink, or almost pure white, with a brighter tinge in the centre and at the tips of the petals. This Rose is an evergreen and makes an excellent stock for grafting or budding.

It is either planted in nursery beds, where it quickly throws up a stem suitable for standards in the same way as we employ the Dog Rose, or in hedges, and left to its naturally luxuriant growth to produce its own charming flowers in rich profusion, or rows of cuttings are put in where it is intended to leave them, and subsequently budded with some of the varieties of the diverse tribes we have named.

We admired it most when treated in the manner last indicated. In the gardens of the Villa Lizerbe, Nice, the residence of M. Cazale, we saw three or four long hedges reared in this way; and on the sixth of May they presented a most gorgeous feast of flowers. To give only one instance, we plucked, at random, a flower of Gloire de Dijon which measured five and a half inches in diameter, or sixteen and a half in circumference. And it would not have been difficult to find even larger flowers.

This is how the intelligent head gardener, M. Guichard, obtained such splendid results. The soil where the hedge was to be made having been moved to the depth of more than three feet, was planted towards the end of winter with cuttings of well-ripened wood of *Rosa Indica major*, about nine inches apart. They were left to grow as much as they would and not cut back at all. In August they were budded nearly close to the ground, and in the following year already they formed a hedge producing flowers abundantly. Iron wire stretched upon slender Bamboo stakes is sufficient to support the branches. Pruning is only resorted to to keep them in shape, remove exhausted branches and shorten gross shoots. This Rose is also easily propagated by pegging down long branches or slightly covering them with earth, cutting them asunder at the joints when rooted, and thus obtaining as many plants as there are joints.

By this very simple process M. Cazale has succeeded in raising his Rose Hedges of incomparable beauty. From these hedges waggon loads of flowers might be cut every year. It is the varieties which flower in winter, amongst which *Safrano* is the very best, that are here propagated on a large scale. We particularly noted: *Souvenir de la Malmaison*, *Chromatella*, *Gloire de Dijon*, *Général Jacqueminot*, *Maréchal Niel*, *Safrano* and *Gloire des Rosomanes.* A large number of others grew and flowered equally as well as the foregoing. In conclusion, we recommend *R. Indica major* as a stock wherever the winters are not very severe, and where earthing up or covering around the base is sufficient protection to secure the advantages of this vigorous growing species for this purpose.

E. A.

PROPAGATION OF OREOPANAX FROM CUTTINGS.

The Araliaceæ in general, with the exception of those hardy species which are easely propagated from portions of the stem, are difficult to increase from cuttings. Those taken from the end of the main stem or branches, notably the Mexican genus *Oreopanax*, are often a very long time before they take root. Hence there is an unfortunate delay in the spread of these splendid plants. There is, however, an excellent method certain to lead to success. And this is to select only the lateral, or, as it were, adventitious shoots which are formed on the main stem. These should be taken off young and at once placed in heat, just as we should treat ordinary soft-wooded subjects. This simple system has been successfully employed by M. Cornélis, head-gardener to Viscount Vigier, at Nice, in the propagation of *Oreopanax dactylifolia* and other difficult species.

E. A.

THE BOTANIC GARDEN OF ST. PETERSBURGH.

On our return from Russia in 1869, we published a description of this grand establishment ([1]), which is under the direction of the learned Dr. Regel. An exhaustive article from his pen on this subject, has recently been published in the *Gartenflora*, from which we extract the following particulars, which will give some idea of the progress made in this garden during the last half a century.

In 1823, the number of species cultivated did not exceed 1500; but in 1824 there was a considerable increase, bringing the total up to 5682, which was augmented to 12000 in 1830. For twenty years the number remained almost stationary, for in 1850 it was only 12061. But after this there was a rapid accumulation of species. In 1863 they numbered 16,500, and in 1871, 21,320, or probably the largest number in cultivation in any single establishment in the world.

These unrivalled collections comprise: 827 species of Ferns, 1088 Orchids, 214 Bromeliads, 350 Aroids, 270 Palms, 415 Conifers, 787 Cacti, etc., 1128 hardy shrubs and trees, 2763 hardy herbaceous plants, and 1164 economic and useful plants.

The herbarium is enormous, containing 5507 classified bundles, including, according to Dr. Regel's estimate, 165,000 species; a total, however, that we can scarcely accept.

The Botanical Museum contains numbered fruits and seeds up to 25,500; 59,047 specimens of woods; 1906 fossil plants, and 1530 useful products of the vegetable kingdom.

A most extensive botanical library enables them to work up these rich collections. It contained, in 1871, 7947 works, in 15,552 volumes.

It will be understood, that with these almost unlimited materials for reference, and the liberal grants continually devoted by the Russian Government to the advance of science, the Botanic Garden of St. Petersburgh should hold a very high place in contemporary botany. Thanks to the vigorous direction of Dr. Regel at the head of the establishment, it worthily fulfils its purpose.

E. A.

([1]) *Un mois en Russie*, par Ed. André. Masson, Paris.

THE NEW GLADIOLUSES OF 1874.

M. Souchet, the successful raiser of many of the finest hybrid *Gladioli*, has been compelled through failing health to relinguish his favourite business; and henceforward the task of upholding the fame of the establishment will devolve upon his successors, Messrs Souillard and Brunelet. No doubt they will maintain the reputation confided to them.

Their novelties this season are eighteen in number; all of which are first rate. From this extraordinarily fine lot we may select the following, the cream of the cream of all that is lovely in these splendid plants.

Amalthée, a fine variety of moderate stature bearing a splendid spike of large, pure white flowers with broad patches of a rich violet-red; throat violet velvety; anterior divisions of the perianth slightly shaded with lilac.

Belladonna, a fine spike of well set white flowers shaded with bright lilac, the lower divisions marked with slender bright carmine stripes. Shape of the flower very peculiar and quite new.

L'Unique Violet, spike very long bearing unusually large dark lilac flowers tinged with violet and flamed with deep carmine. A vigorous grower of perfect habit.

Variabilis, spike long, flowers extra large, pure white, spotted or not, and sometimes dashed with lilac; bottom of the throat violet. An exceedingly effective branching variety.

Merveille, very beautiful rose cerise, faintly shaded with violet, bordered and flamed with deep carmine; centre very bright.

Psyche, a magnificent large spike of delicate rose coloured glazed velvety flowers, the inner divisions of a deeper rose, flamed with bright carmine. Unrivalled in form and colouring.

Aréthuse, a fine spike of perfectly formed delicate white flowers, faintly tinged with pink and striped and flamed with bright carmine.

Murillo, a magnificent spike, bearing beautiful bright cerise red flowers of extra size, all the divisions banded with pure white, and the lower ones almost altogether white. A first-rate variety.

Le Vésuve, an extremely long spike of beautiful brilliant fiery-red flowers, very large, and effective. A late, strong-growing variety.

De Mirbel, a large spike of extra large perfectly shaped widely expanded handsome rose coloured flowers, slightly tinged with violet or lilac, ground very bright, striped and flamed with deep carmine.

Asmodée, a very beautiful spike of cerise-red or bright purple flowers, bordered and flamed with a rich garnet red, spot and very broad rays white. A very distinct variety.

Le Tintoret, a very long and handsome spike of fine open flowers of a beautiful cerise, flamed with carmine near the edges, and with a carmine spot upon a yellowish ground. A strong-growing variety.

To the foregoing dozen unrivalled varieties, we may add the following six, which are scarcely appreciably inferior in point of beauty.

Ondine, a long spike of perfectly disposed white flowers shaded with lilac, each division furnished with a small deep violet blotch, and faintly dashed with very bright carmine near the edges.

Albion, a very large spike bearing handsome white flowers of unusual size, faintly and delicately tinged with lilac and sometimes flamed with lilac carmine. An extra tall variety.

Triumphans, a very large and beautiful spike of cerise flowers, admirably set.

Cassini, extra large spike of perfectly arranged beautiful rose flowers flamed with carmine, lower divisions elegantly striped with carmine on a very bright ground.

Ambroise Verschaffelt, a splendid spike of perfectly formed pink and white flowers, flamed with garnet red, divisions with a large rose spot. An exceedingly effective variety.

Sirène, delicate clear bright rose slightly tinged with orange and broadly rayed with red on the lower divisions, spot red on a yellow ground.

Viator.

HORTICULTURAL CHRONICLE.

June, 1874.

— Tropical Fruits. — Several new kinds of tropical fruits are beginning to be sold in some of the principal European cities. New, of course, so far as Europe is concerned. We lately saw some Peruvian and West-Indian Cherimoyers at Hediard's, in Paris; and we know, too, that they are sold in Covent Garden. The Sour-sop of the West-Indies, *Anona muricata*, weighs upwards of two pounds. It is of a greenish colour, and covered with prickles, and the white flesh possesses an agreeable sub-acid flavour. *Anona squamosa*, or the Sweet-sop, is the one we saw offered for sale. It is extensively cultivated in the tropics and affords a most delicious fruit. The Custard Apple, *A. reticulata*, has yellowish pulp of a less delicate flavour, but it is, nevertheless, esteemed in the West-Indies. In London the Sapodilla Plum, the fruit of *Sapota achras*, is sold, under the name of *Nespras Nepalica*, as well as the fruit of *Euphoria litchi*, to which we quite recently alluded. We shall be glad to see this trade increase, and bring us fresh flavours wherewith to refresh our surfeited palates.

— School of Horticulture at Versailles. — This institution is now organised; Mr. Hardy, junr. having been named Director. The classes will open October 1, 1874. We shall return to this subject when making known the programme of the courses of instruction. In the meantime we may congratulate the French Government upon having entered upon the path, long since opened in Belgium, and which, in a great measure, has led up to the acknowledged superiority of the latter country in gardening matters.

— Persian Asparagus. — It appears that gardening quacks and vendors of marvellous things are not exclusively confined to the continent. The *Gardeners' Chronicle* for April 18, publishes a circular worded almost as follows:

Persian Asparagus
2*s*. per package.
This is a
New and rare variety
surpassing all others for
its size, Tenderness and
Delicacy.

It is fit for table in three months after Planting, each seed at this short period producing Three Stalks as large as a Candle, and will, during the year, produce at least half a bundle.

It is fit for use all the year, except the Winter months, is not susceptible to frost, and will grow in any country or soil.

Any comment from us would be superfluous.

— Masdevallia Lindeni and Harryana. — At one of the recent meetings of the Royal Horticultural Society of London, Mr Denning, Lord Londesborough's able gardener, exhibited three splendid large-flowered Masdevallias namely: *M. Lindeni*, *M. Harryana* and an intermediate form connecting these two plants. When relating this fact in the *Garden*, our colleague, Mr Robinson, adds that these supposed species are specifically identical, thus bearing out our view of their affinities when we published *M. Lindeni* var. *Harryana*.

The plant that we published under the name of *M. Lindeni* is, therefore, according to the law of priority, the typical form, to which *M. Harryana* must be attached as a variety; the latter being easily distinguished at first sight by its sepals being connate and yellow at the base, not white, as in *M. Lindeni*. Mr Denning's plants lead us to expect to see some more new varieties of this charming species.

— Selling price of Anthurium Scherzerianum. — To give an idea of the high prices given for fine specimen plants in England, we may mention that a large example of this plant in Mr Micholl's collection fetched £ 60 at a public auction. This grand plant, in addition to its unusual size, possessed the more important quality of large and brilliantly coloured spathes.

— A Crystal Palace at Liverpool. — There is great talk of erecting a Crystal Palace at Liverpool, after the style of that at Sydenham, including a large Winter Garden, an Aquarium, and a Zoological Garden. Very probably Sefton Park, which we had the honour of designing, will be the place chosen for this new establishment, as there alone a suitable site could be found.

— The Melon-Cucumber. — In Mr Watson's Nursery, at St. Albans, a very curious freak of Nature was played on a Cucumber plant last Summer, and the plant was figured and described by Mr W. G. Smith in the *Journal of Horticulture;* the figure and article subsequently appearing in the *Gardeners' Chronicle*. The case was something analogous to what occasionally happens to the Peach, when we have Peaches and Nectarines produced on the same branch. The plant in question bore not only very fine fruit of the normal club-shaped true cucumber, but also a perfectly formed melon, which at the time the description was written was between four and five inches long and eight round. Whether this was a natural sport or a hybrid was not certain, but Mr Watson held it to be a hybrid between Munro's Little Heath Melon (which was growing near) and Watson's Antagonist Cucumber. At the time when it was drawn, the fruit was not ripe, and hence it could not be known whether it contained perfect seeds and possessed the true melon flavour. We are reminded of this strange production by the appearance of a figure and description in the *Revue Horticole*, and it would be extremely interesting to know whether it matured seeds, what the projeny is, if any, and other particulars. Perhaps some of our correspondents may know what the end of it was. E. A.

— Distinction awarded to Mr. Ed. André. — We are glad to learn that H. M. the king of Holland, has recently decorated M. E. André, editor of the *Illustration horticole*, wilh the order of the Couronne de Chêne, in recognotion of the valuable services which he has rendered during the last four years in superintending the important improvements in the town of Luxembourg. J. L.

PL. CLXXI.

AZALEA MADAME GLONER.

NAT. ORD. ERICACEAE.

ETYMOLOGY: From ἀζαλέος dry, parched, in reference to the starved appearance of some species, or, according to some writers, to the sterile nature of the country where some of the species grow.

GENERIC CHARACTER: (¹) *Calyx* quinquepartitus. *Corolla* hypogyna infundibuliformis v. subcampanulata, limbo quinquefido v. rarius septemfido, aequali v. subbilabiato. *Stamina* hypogyna v. imae corollae inserta ejusdem laciniis numero aequalia (5) v. saepius dupla (10 v. 14); filamenta filiformia, adscendentia, antherae muticae, loculis apice poro obliquo dehiscentibus. *Ovarium* quinque-decemloculare loculis multiovulatis. *Stylus* filiformis; stigma capitatum. *Capsula* globosa v. oblonga, quinque-decemlocularis, septicide quinque-decemvalvis, columna centrali placentifera libera. *Semina* plurima, testa laxa, reticulata scobiformia.

Frutices vel arbores, in Europae et Asiae mediae alpibus, in America boreali in Indiae terra continenti et insulis spontanei, in hortis mutuo specierum commercio, et officiosae adonistarum manus lenocinio formis plurimis hybridio multiplicatae; foliis alternis, integerrimis, sempervirentibus v. deciduis floribus corymbosis speciosis, luteis, roseis, purpureis v. albis.

Endlicher, Genera Plantarum.

SPECIFIC CHARACTER: A. indica, ramulis petiolis nervis foliorum at calycibus setis strigosis adpressis eglandulosis onustis, foliis cuneato-lanceolatis ciliatis utrinque acuminatis, floribus terminalibus 1-3 breviter pedicellatis, calycis lobis oblongo lanceolatis non viscidis acutiusculis. — Hab. per totam fere Chinam et Japoniam, in collibus siccioribus frequens. — *Dc. Prodromus.*

CHARACTER OF THE VARIETY: An extremely free-flowering variety of regular outline and erect habit. Leaves medium size, oblong, acuminate and narrowed towards the base, downy. Flowers perfect in shape, very large, arranged in dense clusters, pure white, broadly campanulate, with obcordate, slightly waved petals, recurved at the tip. A splendid variety named in compliment to M^rs Prosper Gloner, eldest daughter of M. J. Linden.

E. A.

(¹) This includes *Rhododendron*, to which genus all the Azaleas, with the exception of the alpine *A. procumbeus*, are usually referred, the character upon which the two genera were originally founded having been connected by intermediate species. But the names have been to long in use to admit of any change in horticultural works.

THEOPHRASTA IMPERIALIS (?).

It is now more than ten years ago since we first saw and admired specimens of a handsome Brazilian tree with noble foliage, sent to various Exhibitions by M. Linden. It is known in collections under the name of *Theophrasta imperialis*.

This name is evidently misapplied; but hitherto we have not been able to assign this highly ornamental plant to its true position, although some of the principal herbaria have been rummaged, and divers correspondents consulted. M. de Saldanha, a distinguished Brazilian botanist, at the present moment in Paris, and who is well acquainted with the flora of his native country, has no knowledge of the plant in question. And, so far as we are aware, not one of the numerous contributors to the *Flora Brasiliensis* has met with it amongst the dried plants from that country.

So long as it was represented in Europe by isolated specimens only, ornamenting a few of the larger conservatories, we might patiently wait till one or the other of the plants had acquired the happy faculty of flowering, before we could have discovered its real affinities.

But a introduction of seeds, has enabled M. Linden to prove, it is already many years, that the supposed *Theophrasta* or *Curatella imperialis* is undoubtedly a member of the Sapotaceae.

This fact established, we append the following description, drawn from the largest specimens we have seen, though destitute of flowers.

A tree with a stout erect straight cylindrical simple or slightly branched stem, having an ashy gray bark, streaked with reddish brown on the older parts, and clothed with a short dense rufous pubescence passing to a pearl gray on the young shoots. Leaves alternate glabrous, blade convolute in bud, obscurely triangular at the base; petiole thick and short (about 8 lines) furfuraceous cylindrical, flattened above, decurrent at the base in two faint lines down the stem; blade spreading ovate-lanceolate narrowed from two thirds of its length to the base, shortly acuminate at the apex, with a flat surface in the centre and wavy at the margin, where it is furnished with long prickly teeth, some of which are directed upwards and others deflected, between unequal rounded sinuses; texture of the blade coriaceous strongly veined and very tough; midrib triangular raised above and paler than the beautiful polished green of the blade, rounded and very prominent below; secondary nerves pinnate raised on the upper surface towards the midrib only, the remainder immersed, but very prominent below, given off at almost regular intervals of 4 to 8 lines.

The carriage of the foliage is very majestic, the separate leaves being upwards of a yard in length by 10 inches in width; young vigorous plants, from 5 to 6 feet high, producing a very grand effect when clothed with leaves to the base.

If any of our correspondents can assist us in the determination of this beautiful plant, of which M. Linden has succeeded in raising some healthy seedlings, we shall feel obliged to them.

E. A.

L'Illustration Horticole.

P. De Pannemaeker, ad nat. pinx. in Horto Lind. J. Linden

L'Illustration Horticole.

PL. CLXXII.

DENDROBIUM INFUNDIBULUM, LINDLEY,

FUNNEL-FLOWERED DENDROBIUM.

NAT. ORD. ORCHIDACEAE.

ETYMOLOGY: from δενδρον, a tree, and βιος, life; growing upon trees.

GENERIC CHARACTER: *Sepala* membranacea, erecta vel patentia, lateralibus majoribus obliquis cum basi producta columnae connatis. *Petala* sepalo supremo saepius majora, nunc minora, semper membranacea. *Labellum* cum pede columnae articulatum vel connatum, semper sessile, indivisum vel trilobum, saepius membranaceum, nunc appendiculatum. *Columna* semiteres, basi longe producta. *Anthera* bilocularis. *Pollinia* 4, per paria collateralia. *Herbae asiaticae epiphytae, nunc caulescentes, nunc rhizomata repente pseudobulbifero. Folia plana, saepius venosa. Flores solitarii fasciculati vel racemosi, speciosi.* — (Lindley genera and species of Orchidaceae).

SPECIFIC CHARACTER: *Folia* lanceolata angusta acuta; *sepala* linearia-oblonga; *petala* oblonga obtusa triplo latiora, *mentum* infundibulare pedicello aequale; *labellum* lobis lateralibus rotundatis intregris intermedio subrotundo plano serrulato emarginato. In sylvis moulmeinensibus. — T. Lobb. in herb. Hooker.

Dendrobium infundibulum, Lindley in *Linnean Society's journal*, 1859, p. 16.

This beautiful Orchid was first discovered by Mr T. Lobb upon the mountains of Moulmein at an elevation of more than 5000 feet above the level of the sea, and was originally described by Doctor Lindley in the *Journal of the Linnæan Society of London* in 1857. Three years later it was noticed in the *Gardeners' Chronicle* upon the occasion of a very fine specimen flowering at Messrs. Lows', at Clapton, under the name of *D. Moulmeinense*, but which was really our plant.

This species comes near to *D. formosum*, but greatly exceeds it in beauty, having large flowers, often as much as four inches in diameter, beautifully tinted with a bright purple. The erect stems are clothed with black bristly hairs at the base, and frequently bear a large number of fully expanded flowers at te same time. The Reverend Mr Parish, who re-discovered the plant the year after Lobb, counted as many as 44 open at once.

This species has already flowered in England several times, notably at Knypersley *(Gard. Chron.* 1864, p. 269), and at Mr Rucker's. But notwithstanding its surpassing beauty, it is still extremely rare. It varies, though not to any great extent, in the height of its stems and in the more or less brightly coloured red or orange base of the labellum; but in all its variations it remains quite distinct from *D. formosum* and *longicorne*, the species to which it is most closely allied.

The plant figured under this name in Hooker's *Botanical Magazine*, has almost pure white flowers with a scarcely perceptible tinge of yellow, and is of a pure yellow, not orange, at the base of the labellum. E. A.

INTERNATIONAL HORTICULTURAL EXHIBITION AT FLORENCE.

Whatever the foreign visitors may have expected to see at Florence on the twelfth of May last, it certainly could not have been a repetition of the floral displays they had witnessed during the past ten years in the great capitals of Europe. The imaginative traveller would readily picture to himself the inhabitants of classic Italy, that land of noble deeds, fine arts and flowers—decking themselves in wreaths of native flowers as in the days of the Roman conquerors, and leaving to the northern peoples their costly and careful culture. It was an overflowing abundance, a rich profusion, combined with an indescribable southern fragrance, and an intensity of glowing colour, developed by the ardent rays of a semi-tropical sun, and not variety, that one looked for.

But not to dwell too long upon our fancies, we may say at once that we conjured up in our imagination some vast garden of the Hesperides, a fairy orchard of golden apples or orange trees, all bending beneath a grateful burden (in the words of the poet), " de fruits naissants et mûrs, de fleurs et de feuillage. „

We expected to see Palermo with its grove of purple spathed Date Palms; Bordighera represented by its " Cardinal Palms „; the Citron trees of Amalfi arranged in terraces; the Rose garlands of the corniche; hedges of Agave, and Opuntia fences, and beds of terrestrial orchids, like the Serapias which carpet the Solfatare of Pouzzoles. To complete this picture of truly Italian national gardening, we imagined a bordering of maiden-hair fern, grottos overgrown with Lycopodium and numerous plants with brilliantly coloured, odoriferous flowers, such as carpet the mountains at the present time from Genoa to Sorrento, from Venice to Etna.

But this pleasant dream was soon dispelled. On entering the Exhibition we are at once carried back to one of the grand flower shows of the North. Not only do we meet with our old acquaintances amongst the juries, and the usual botanical and horticultural celebrities, but many of the selfsame plants which we observed at London, Brussels, Amsterdam and St. Petersburgh, greet our eyes.

But we experienced no disappointment, far from it. We are indeed greatly surprised at the extensive display of tropical flowers. And a very rapid survey furnishes the gratifying evidence that the Florence Exhibition is one of the most attractive we have ever witnessed. In previous notices

we have already indicated the organisation of the Committee, presided over by Professor Parlatore, to whom the management of the Exhibition and Congress was intrusted. All the members have shewn the most praiseworthy zeal and energy; but the actual success of this great undertaking is due in a great measure to the untiring perseverance of the secretaries, Sing. Fenzi and d'Ancona. Indeed, the task was a difficult one, and new to the country. If the organisation of such a gathering is relatively easy to English and Belgian gardeners, accustomed, as they are, to similar festivals, such was not the case with these gentlemen, who were making their maiden effort, which fell little short of being a master-piece. The difficulties of the situation were increased by a vexatious accident, the illness and absence of the *Deus ex machinâ*, Professor Parlatore. This energetic gentleman was stricken down by sickness just as he would have enjoyed the fruits of his labours; and was obliged to receive the visits of the numerous friends who came to testify their sympathy and congratulate him upon the well merited success of the understaking, in his bed.

The Exhibition, as we have announced elsewhere, was held in the new market building, a noble edifice erected by the city of Florence from the designs of M. Mengoni. This vast hall, situated near the celebrated square of Santa Maria novella covers an area larger than the square of La Scala at Milan. It consists of a central nave, 115 feet high, and two less lofty aisles. The lower part alone is of stone, the upper of iron and glass. Abundance of water, vast cellars, plenty of air and space render this building extremely convenient and suitable for the purpose for which it is intended.

On mounting the few steps of the central nave, we have spread out before us a fine view of the Exhibition in its entirety, as a whole, judiciously and elegantly arranged. In the disposition of the different lots of plants, neither the English system, at once so convenient and so ugly, of regular groups, nor the inevitable garden of vales of the French Exhibitions, was adopted, but a sort of compromise between the two, something in the way of the style commonly seen in Belgium.

Immediately facing the entrance an enormous group of Azaleas, belonging to the Count della Gherardesca, is the first thing to strike the eye, from the brilliancy and variety of colour displayed by the different plants. The faultless clusters of multicoloured corollas are developed in great profusion, though yet not equalling the perfection and splendour of the Belgian and English Azaleas. The plants are still young, the varieties good, and the culture careful.

Opposite this group, away down the nave, is a large circular basin occupying the centre of the building, from which a powerful jet of water is thrown to a height of 60 feet, enlivening the Exhibition in its noisy, glittering fall. At the extreme end of the hall, there is a lofty rockwork of tufa, over which the bounding bubbling waters of a cascade are leaping, finally coming to rest in a basin at the base of irregular outline, overhung with graceful masses of Banksian Roses and other plants. Clothing the steep sides and terraces of the rockwork we have groups of Phormium, Azaleas, Tree Ferns, Agaves, and large Magnolias, beneath the shade of which both fresh water and marine aquaria permit of the study of some of the curious denizens of the great waters.

To lengthen the perspective of this view, large groups of plants with ornamental foliage are arranged on each side of the nave, separating it from the wings. To the right, Prince Demidoff, whose name we shall find in the greater number of the competitions, exhibits some very large half-hardy Conifers, *Podocarpus*, *Seaforthia elegans*, with long pinnate leaves, a *Brownea grandiceps*, just throwing up its young growth of elegant red spotted foliage, very tall specimens of *Cordyline australis*, *Caryota urens*, *Phœnix dactylifera*, *Areca*, etc., with a foreground of commoner, though well staged, greenhouse shrubs. The group to the left contributed by the Botanic Garden of Florence, includes grand specimens of *Pandanus utilis*, the Sugar Palm, *Arenga saccharifera*, a beautiful *Musa ensete*, immense examples of *Phœnix*, a superb *Dioon edule*, *Pandanus Javanicus* with its leaves traversed by broad, silvery bands, various species of *Latania* and *Cocos* in very large specimens, a *Livistona sinensis* (under the name of *L. Skinneri*) a magnificent tuft of *Chamœdorea Schiedeana*, etc., the whole surrounded in the same way with shrubs. Before going any farther we may call attention to a lovely little plant, very common here, and growing freely in the open air, of which a very effective use was made in the Exhibition. It is the *Ixia crocata*, the numerous bright cinnabar red transparent flowers of which formed a very striking bordering to the groups of green plants. We saw this charming species again at the Villa Demidoff, San Donato, where it was planted in close beds, and everywhere it gave us the greatest pleasure.

The Botanic Garden of Florence holds a distinguished place in all parts of the Exhibition. When we visited it in December last, we were truly surprised at its richness in certain genera, and the beauty of the specimens of some old and rare plants. Thus, for instance, 60 species of Palms, 13 Cycads and 11 Pandanads are found in this establishment, and they contributed not a little to the embellishment of the Exhibition. We especially noticed a *Cocos oleracea (Cocos capitata!)* standing out by itself of the most beautiful growth bearing a number of its curious nerved spathes, and long, glaucous, recurved leaves; a gigantic *Pandanus odoratissimus*, and other noble specimens, as *P. Javanicus*, var., *Macrozamia Mackensii*, *Zamia Preissii*, *Kentia gracilis*, *Bactris spinosa*, *Syagrus majestica*, *Geonoma gracilis*, *Wallichia porphyrocarpa*, *Zalacca Assamica*, *Corypha macropoda*, *Daemonorops trichrous*, *Latania Loddigesii*, and many others rarely seen in Exhibitions. A few fine Tree Ferns, a large *Araucaria Bidwillii*, a *Musa ensete* and an *Araucaria Cunninghami glauca*, also belong to this rich establishment, which has improved so much under the vigorous administration of Professor Parlatore.

For many years the gardens of Prince Demidoff at San Donato have been celebrated for their superior culture, and they has lost nothing of their former reputation. The enormous quantity of things from thence, abundantly prove this, and we feel it our duty to offer our congratulations to M. Steffatscheck, the head gardener. Not only do we see fine specimens of the exotic trees which give this garden so great an interest for botanists; but the newer stove plants are represented in a richness and perfection, that leave nothing to be desired. One sees here the hand of the English gardener, Mr Goode, who had charge of them until quite a recent date; but it is only fair to add that they have not deteriorated in any way

since the change. In one or two groups near the Entrance are some fine specimens, such as *Cibotium princeps*, twenty-two feet high, *Sciadophyllum pulchrum*, covered with fruits (an uncommon occurrence), *Dacrydium cupressinum*, *Aralia quinquefolia*, *Sciadophyllum Reinwardtii*, splendid *Dasylirion graminifolium* and *Littaea gracilis*, a *Botryodendron* (under the singular name of *Aralia reticulata)* and a gigantic *Casuarina suberosa*.

This aged tree is of a size rarely seen; its deeply furrowed, corky bark and twisted trunk, and long, slender, drooping branches give it a very curious aspect. There are many other fine plants from this noted garden, amongst them, *Sobralia macrantha*, in flower, *Pritchardia pacifica*, some very beautiful examples of *Seaforthia elegans*, a *Cycas revoluta* in fruit, *Musa vittata*, *Araucaria Cookii*, *Dammara australis*, *Phyllocladus trichomanoides*, *Doryanthes excelsa*, *Dillenia speciosa*, etc. But there is one plant above all others that attracts universel admiration. It is a giant specimen of *Ruscus androgynus* with six stems, trained over a large iron trellis, and covering it with its broad foliaceous branches bordered with small flowers, like a *Xylophylla*. San Donato preserves its reputation for Australian plants with its forty-eight species of *Proteaceae*, amongst which we were pleased to see a good number of species almost lost to cultivation.

Leaving the greenhouse plants and passing onwards to the stove, situated in one of the glazed pavilions of the aisle to the left, we find amongst the stove plants of the same exhibition something better still. We were, indeed, surprised to see the perfection attained in the culture of the *Crotons*, *Dracaenas* and *Marantaceae* from San Donato; and Prince Demidoff deservedly gained the first prizes for his plants. In the class of thirty different Marantas, we particularly noticed *M. roseo-picta* and *illustris* which are of a size seldom seen. This collection also contained some of the latest novelties amongst them, our beautiful *M. hieroglyphica*. The Crotons were no less beautiful, forming, perhaps, the most conspicuous group in the Exhibition in respect of size and skilful culture. The best of them were *C. pictum*, *Veitchii*, *cornutum*, *Hookeri*, *aucubaefolium augustifolium* (magnificent) and *interruptum*. The last plant, appeared to us different at Florence from what we have seen it anywhere else. We no longer recognised the plant we formerly named in conjunction with M^r^ J. G. Veitch, in the compact, brightly coloured specimens with short leaves, of the Florentine gardens. It would be worth while investigating the matter, to ascertain whether this apparent alteration is the result of high cultivation, or whether we have not here a distinct form under the name of *interruptum*, which by some chance was sent out to Florence by Messrs. Veitch. This we look upon as an interesting fact to clear up.

Still keeping to the same exhibitor, we may notice some of his superb stove plants. In regard to culture they would yield nothing to the best to be found in England or Belgium. First of all, a splendid *Adiantum Farleyense* with its graceful weeping foliage; then a *Drymonia Turialvae* (the finest specimen we ever saw, and covered with flowers) associated with *Pandanus ornatus*, *Cyanophyllum magnificum*, *Campylobotrys Ghiesbreghtii*, *Dieffenbachia latimaculata*, *Sphaerogyne latifolia*, *Anthurium regale*, various species of *Fittonia* in pans, *Alocasia Veitchii*, *Costus Amazonicus*, *Dieffenbachia Baraquiniana*, etc., altogether fifty plants, forming an unrivalled collection of the choicest forms in cultivation. Not far from these stood a fine collection of Caladiums, which could be traced to the same source. Amongst them we observed a fine plant of *Albert Victor*, a good seedling raised by M^r^ E. G. Henderson, of London, which we saw for the first time at South-Kensington at the October Exhibition of 1872. The same superiority is evident in the collection of thirty Dracaenas, which comprises all the choice novelties, represented by magnificent plants, and which brought their owner an equal first prize with the marquis Corsi-Salviati.

We have just mentioned the name of another of the principal exhibitors. The marquis Corsi-Salviati is a young man who appears to be a passionate lover of beautiful plants. He takes Exhibition Honours for the first time; and is represented in no fewer than 21 classes, in nearly all of which he is successful. His Palms, Crotons, Dracaenas, Aroids and Marantas were simply splendid. The gardener, M. Ragioneri Ridolfo, who has charge of the cultivation of these collections on the estate at Sesto, is an Italian and merits the greatest praise. Some few good orchids, amongst them a strong flowering plant of *Aerides quinquevulnerum*, *Cattleya chocoensis*, *Cypripedium Hookeri* and *Vanda insignis;* but on the whole the Orchids were not worthy of so important an exhibition.

In regard to the culture of Dracaenas the Marquis had no cause to envy the Belgians. Here are beautiful specimens of the latest novelties admirably furnished with leaves from the very base. The Dracaenas are not equal in size to those from San Donato, but include a larger number of rare and new forms.

Amongst the Marantas, we note the latest novelties : *M. Luciani*, *setosa*, *bellula*, *pacifica*, *Makoyana* and *hieroglyphica*. In a collection of various plants of superior culture, we may mention a noble specimen of *Dieffenbachia imperialis*, several *Areca alba*, *Verschaffeltia splendida*, *Vriesia Glaziouana*, *Ficus dealbata*, *Areca Verschaffeltii*, *Pandanus ornatus*, *Anthurium Scherzerianum*, etc. From fifty-four species of handsome Palms, we select the following names : *Areca Madagascariensis*, *Brahea nobilis*, *Morenia corallina*, *Calyptrogyne elata*, *Caryota majestica*, *Chamaedorea lunata*, *Chamaerops stauracantha*, *Cocos Procopeana*, *Dekenia nobilis*, *Geonoma zamorensis*, *Cocos Weddelliana*, *Iriartea exhorrhiza*, *Kentia Forsteriana* and *Belmoreana*, *Martinezia Lindeniana*, *Seaforthia Dickinsoni* and *Verschaffeltia melanochaetes*.

The Aroids included numerous and excellent plants, but as the competition was for fifty species or varieties, it was found necessary to make them up with the coloured varieties of Caladium, which rather spoilt the class. The Queen plant of this lot is a magnificent specimen of *Anthurium crystallinum*, of perfect culture. Altogether the Marquis Corsi-Salviati's exhibits were an extremely good lot, and deserve our warmest admiration.

Another of the leading exhibitors is the Marquis Torrigiani, of Florence, the owner of a celebrated villa, of which we may speak in detail on another occasion. The collections belonging to this gentleman rival those we have already had under consideration. Greenhouse and stove plants, of excellent cultivation, include some large and handsome spe-

cimens as *Pandanus*, *Conoclinium ianthinum* in flower, *Dasylirion longifolium*, *Lindenbergia roseo-carnea* and some immense plants of *Rhynchospermum jasminoides*. There is also a superb specimen of *Medinilla magnifica*, covered with its large rosy bracteate panicles; *Erica intermedia*, bearing a profusion of its long-tubed white flowers. Large Crotons, handsome plants of *Aglaeonema commutatum*, *Areca alba*, *Anthurium Scherzerianum* in flower, *Fittonia Pearcei*, and especially the grand *Phoenicophorium Sechellarum*, place this collection in the front rank. Opposite, in one of the octagon pavilions, is a numerous and splendid collection of Gloxinias, exhibited by the same gentleman, and such a lot as M. Vallerand himself would not disavow.

Not far from here we see, for the first time, the double Cinerarias of Messrs Haage and Schmidt, of Erfurt. These pretty plants merit the reputation they have already acquired. Hitherto, only four varieties have been secured: *deep blue*, *bright violet*, *violet striped* and a *paler violet*. But doubtless these are only the forerunners of something infinitely better and more varied, and new varieties will rapidly follow each other improving in form and fulness, furnishing us with another set of first-class market plants.

But we hurry on to the new plants, which always form one of the most attractive features of these international gatherings. Again we have the pleasure of announcing that M. Linden stands first. His twenty-five new Palms created quite a sensation, and have greatly occupied the horticultural press. Amongst them, indeed, were plants of surpassing beauty and elegance, including the original plant of *Geonoma gracilis*, which we publish to-day. Here follows the list of the species:

Calamus lanatus.	Kentia Balmoreana.
— nitidus.	— Forsteriana.
Calyptrogyne elata.	Phoenix natalensis.
Cocos elegantissima.	— rupicola.
— sp. Yurumaguas.	— zeylanica.
— Weddelliana.	Pinanga sumatrana.
Daemonorops accidens.	Ptychosperma atlantica.
Deckenia nobilis.	— rupicola.
Geonoma gracilis.	Pritchardia Martiana.
— zamorensis.	Verschaffeltia melanochaetes.
Glaziova insignis.	Wallichia Wagneri.
Kentia australis.	Welfia regia.

To this collection we must add a few other no less interesting species: *Acanthorhiza Warscewiczii*, *Pritchardia Gaudichaudi*, *Acanthophoenix crinita*, *Martinezia Lindeniana*, *Hyospathe Chiriquensis*, etc.

The elegant Japanese Maples with dissected leaves have gained the admiration of all the fair Florentines, the lightness and delicate colouring of their lace-like foliage proving irresistible. The six varieties exhibited by M. Linden, (the original plants introduced direct from Japan), are: *Acer roseo-dissectum*, *reticulatum*, *sanguineum*, *atropurpureum*, *ornatum* and *crispum*. For the introduction of these charming miniature trees we are indebted to the late Von Siebold; and they are now daily increasing in favour. But hitherto they have not spread very rapidly, on account of the difficulties encountered in their propagation. We learn, however, that these difficulties have been overcome, and we purpose giving on a future occasion the details of their propagation on a large scale, as practiced by an English Nurseryman.

In the class for various greenhouse plants, M. Linden exhibited some fine examples of superior culture and rare species, amongst which we may name, *Araucaria Neo-Caledonica*, the curious *Rapatea pandanoides*, *Dracaena grandis*, *Phoenix rupicola*, *Araucaria robusta glauca*, *Zamia Roezli* and *Tillandsia musaica*. The twelve Dracaenas staged by M. Linden included the following, of which five are new: *D. amabilis*, *Baptisti*, *Casanovae*, *jaspidea*, *lutescens*, *striata*, *Maclayi*, *Reali*, *Troubetskoyi*, *Youngii*, and an other unnamed species; but conspicuously above all rose a grand plant of *D. gloriosa*. Six magnificent new Aroids, and a set of medicinal and economic tropical plants, complete the beautiful collections contributed by M. Linden, for which he has been rewarded with the first Grand Prize of Honour of the Exhibition.

M. Dallière of Ghent carries off undisputed the first prize in the class for a collection of the best cultivated plants from abroad, with a splendid selection. His collection of forty Palms is superb. We noted a few of the best: *Areca aurea*, *Thrinax elegans*, *Verschaffeltia melanochaetes*, *Areca glaucophylla*, *Areca sapida*, *Sabal Adansoni*, *Martinezia erosa*, *Cocos sp.*, from Yurumaguas, *Geonoma Schottiana*, *Elaeis sp. nova*, *Ptychosperma Alexandrae*, *Geonoma ferrea*. In another class we observed some other very good things: *Euterpe sp.*, *Phoenix tenuis variegata*, *Ceratolobus concolor*, *Catoblastus Engelii*, and a beautiful *Pritchardia pacifica*. The finest specimen of *Anthurium Scherzerianum* belongs to M. Dallière, and it will henceforward rank as a classic plant. His collection of *Marantaceae*, *Nepenthes*, and various stove plants, including many fine novelties, are simply beyoud all praise; but we cannot forbear specially mentioning *Rhododendron Dalhousiae*, *Aphelexis macrantha purpurea*, *Araucaria excelsa glauca*, various Azaleas and Conifers.

M. Stelzner, of Ghent, sends a handsome example of *Oreopanax dactylifolium*, a small collection of highly curious new Conifers, and some hybrid Ferns, to which we shall refer again.

In the class for new plants we are sure to find Messrs. Veitch of London; and here they are as usual. Occupying one of the houses on the right we had the pleasure of inspecting a handsome lot of their principal novelties, such as: *Caraguata Zahnii*; *Croton Youngii*, with long golden leaves; *Dracaena imperialis*; *Abutilon Sellowianum marmoratum*, having the foliage thickly mottled and regularly marked with yellow and white; *Aralia elegantissima*, a delightful species of which we shall give a separate description; *Dracaena Baptisti*, *Cypripedium argus*, having sepals that are pink at the tips, and spotted all over with deep purple, and hairy above; *Epidendrum pseudepidendrum*, with strange green and cinnabar flowers; *Dracaena strictifolia*, having narrow leaves striped with pale yellow and pink; *Cypripedium Dominyanum*, a hybrid between *C. caudatum* and *Pearcei*; and above all the charming *Ficus Parcelii*, to which, also, we shall devote a short separate notice. Some good *Nepenthes*, collections of seeds and an assortment of garden tools were also exhibited by Messrs. Veitch.

M. Aug. Van Geert of Ghent contributes a fine new

Palm called *Areca Dicksoni*, which we believe to be a distinct species from Coromandel; a variety of *Corypha australis* with reddish brown petioles; *Pandanus Van Geertii* a permanently dwarf form with glaucescent foliage tinged with orange towards the base; a handsome *Thuiopsis dolabrata*, and a large plant of *Genethyllis* (*Hedaroma*) *tulipifera* in flower.

We must not forget, either, the collection of Palms exhibited by Messrs. Haage and Schmidt, comprising sixty species, some of them very rare.

Mr Moore of the Botanic Garden, Glasnevin, exhibits a handsome plant of *Ouvirandra fenestralis*, and an interesting hybrid *Sarracenia*, the history of which will appear elsewhere in our columns.

Returning to the native exhibitors, a grand group of stove and geeenhouse plants, comprising a very rich assortment, the property of Comte della Gherardesca, arrest our footsteps. The most noteworthy are: *Agnostus sinuatus*, *Latania*, *Cycas circinalis*, *Musa ensete*, *Epacris*, *Boronia*, *Sterculia*, *Adenandra*, and large Azaleas.

In the Marquis Ridolfi we meet with a distinguished and clever florist, whose splendid Show, Fancy and Zonale Pelargoniums and charming Azaleas, fairly earn him the title.

The Comtesse Giulia, of Florence, sends fifty species of Palms. We particularly noticed: *Areca monostachya*, *Arenga Bonneti*, *Bactris maraja*, *Brahea nobilis*, *Cocos Bonneti* and *Geonoma pumila*.

One of the secretaries, M. Fenzi, of Florence, is an amateur of succulent plants. 85 species of *Agave* and *Fourcroya*, 11 of *Dasylirion*, 22 of *Yucca*, and 22 of *Sempervivum*, indicate collections of considerable extent, and they are not wanting in rare species.

Another very numerous collection, perhaps the most numerous belonging to a single genus, is a group of Marantas exhibited by M. F. Luppis, of Ferrara, comprising no fewer than sixty-one species. We do not remember ever having seen so complete a collection.

The Comtes Papadopoli brothers, of Venice, have also sent a collection of *Marantaceae*, another of Caladiums with coloured foliage, comprising 100 varieties, and 120 varieties of *Coleus*. We confess our inability to discover the interest attached to the innumerable, scarcely distinguishable, forms of *Coleus*; it appears to us to be overdoing the thing. A careful search does not reveal more than twenty really distinct and desirable varieties, even for growing under glass. The forms of *Phormium* belonging to the same gentlemen, although represented by small plants, include pretty well all that are known at present: *Ph. tenax*, *tenax variegatum*, *tenax Veitchii*, *tenax atropurpureum*, *tenax nigro-pictum*, *Cookii* and *Colensoi variegatum*.

The stoves plants brought by M. Schmitz, of Florence, give evidence of superior cultivation. Amongst these we noticed *Latania Commersonii*, *Balantium antarcticum*, *Vanda tricolor*, *Calamus gracilis*, *Zamia vernicosa*, *Thrinax elegans*, etc., all in good health and perfect in habit.

The Count Boutourlin, of Florence, sends an interesting collection of exceedingly large, old, well grown plants. *Polygala buxifolia*, literally covered with blossoms, was placed by the side of some gigantic Kalmias. *Stephanotis floribunda*, is just opening its pretty white flowers. *Carmichaelia australis*, *Rhynchospernum jasminoides*, *Murraya exotica*, *Jasminum geniculatum*, *Hoya carnosa*, *Bignonia jasminoides*, and *Jasminum Sambac*, are remarkable for their fine growth and abundant inflorescence.

The very finest specimen of *Franciscea eximia* we ever saw, belongs to M. Santarelli, of Florence.

Messrs. Palazzi brothers, of Venice, exhibit a very numerous collection of *Bromeliaceae*; but the plants, although including many rare and interesting species, are badly cultivated.

We must not forget to mention the distinguished position attained by M. J. Verschaffelt, of Ghent, with his *Cactaceae* and other succulents. We observed, in passing, *Agave dealbata*, *hystrix*, *Verschaffelti variegata*, *Beaucarnei*, *glauca*, *Gilbeyi*, and other pretty plants of the same class.

The *Cereus* section was represented by *Pilocereus Hoppenstaedtii*, *senilis*, *Dautwitzii* and *lanatus*, shown by Messrs. Haage and Schmidt.

M. Gillion-Mangilli, of Venice, exhibits a variegated variety of the Japanese Medlar, *Eriobotrya Japonica*, of slender merits.

A fine example of *Areca monostachya*, belonging to M. Spaletti, is five feet high, and is already bearing 12 spathes of flowers, giving a more favourable impression of that species than one usually entertains. The same exhibitor has a few other nice Palms. The Bavarian Horticultural Society contributes its forced fruits and vegetables and ornamental plants. The Azaleas are good plants, and the Gleichenias and *Rhododendron Nuttalli*, are evidences of a good will. The Aroids from the Botanic Garden of Munich are not wanting in interest; they include a species known only a few years, *Anthurium Martianum*, and *A. Selloum*, *agregium*, *Galeottii*, and *pinnatifidum*. M. Buchner, of Munich, has a handsome specimen of the still undetermined Sapotaceous plant known under the name of *Theophrasta imperialis*.

Prince Troubetzkoi, a distinguished amateur who possesses a well-stored garden of interesting plants at Intra, (Lago Maggiore), furnishes a collection of Bamboos, embracing 13 species, as well as some interesting *Eucalypti*.

Messrs. Krelage and Sons, of Haarlem, anxious to preserve the reputation of their country, and their house in particular, for the first rank in growing bulbous-rooted plants, sent a quantity of charming Tulips, flowering in perfection, and they arrived here in capital condition, notwithstanding the long journey from Holland to Italy. — We were delighted with the Azaleas, pot Roses and Rhododendrons exhibited by M. Scarlatti, of Florence.

In a splendid lot sent by M. Ricci, we observed *Strelitzia Augusta*, *Dasylirion graminifolium* (superb), *Bonapartea glauca*, *Dracaena indivisa*, (under the name of *Freycinetia Baueri!*) *D. cannaefolia* (under the name of *Cordyline Storckii*) and a very beautiful *Yucca Guatemalensis* (under the strange name of *Y. Bassinica?*)

A few fine Azaleas and some late Camellias show that M. Franchetti, the celebrated Florentine grower is not far off, and they are pretty good evidence of what he would have sent had the exhibition been two months earlier.

Passing from the interior of the Exhibition to the temporary gardens outside, we find numerous other interesting collections, which, however, from lack of space we can by no means exhaust.

The Conifers exhibited by Messrs. Scarlatti brothers, of Florence, are small, but there are good plants of such things as: *Abies Witmanniana*, *Biota Japonica filifera*, *Frenela Huegeli*, *Podocarpus Stirlingii*, *Frenela monostachya*, *Torreya Bogotensis*, etc. The hardy trees and shrubs of the same exhibitor include some choice things: *Quercus lanceolata*, *Tetranthera Japonica*, *Ulmus aurea*, *Viburnum macrocephalum*, *Abelia rupestris latifolia alba*, *Viburnum cotinifolium punctatum*, *Ligustrum salicifolium*, *Pittosporum Mayi*, in flower, etc.

The collection of Spiraeas exhibited by M. Pagliai, of Florence, is very extensive, comprising forty species.

M. Berti, of Milan, shows trained fruit trees but on too smale a scale to judge of the merits of the pruning.

The Botanic Garden of Turin has brought together an extensive collection of hardy plants, chiefly alpine, and containing many rare species. We observed that they were arranged in families according to De Candolle's system, which greatly facilitated the examination of so great a number of species.

The Boboli Gardens, where Oranges and Lemons are grown without any protection, furnish a collection in pots.

The Roses sent by M. Bucci, of Florence, are good plants in pots, in great variety, but offering no striking feature.

But the collection of hardy trees and shrubs by the same exhibitor deserve special notice. In spite of the bad labelling we were able to pick out the following species not found in many gardens: *Quercus polymorpha*, *Berberis gardeniaefolia*, *Myrsine retusa*, *Boldoa fragrans*, *Cotoneaster lanuginosa*, *Mahonia Toluccensis*, *Ligustrum multiflorum*, *Elaeagnus Simonii*, *Crataegus laevis*, *Buxus sempervirens navicularis*, and *Quercus virens*. Next to these is a collection of Hollies, amongst which we may name, *Ilex crenata*, *ovata*, *prunifolia*, *crassifolia*, *Cunninghami*, *dentata*, *recurva*, *Caroliniana* and *corallina*.

Messrs. Rovelli brothers, nurserymen of Pallanza, stand at the head of horticulture in Italy. There is a splendid lot of Conifers from their nursery. Most of them are of unusual size and extremely healthy in appearance. We may enumerate a few, as: *Torreya grandis* (13 feet high), *Abies (Picea) inversa*, *Tsuga Hookeri*, *Thuia dumosa*, *Abies Cranstoni dimidiata* (a grotesque variety), *Cryptomeria columnaris* (a new variety), *Abies Engelmanni*, *Abies nigra pyramidalis*, *Prumnopitys elegans*, *Thuiopsis Standishii*, *Abies polita* and *Abies firma*. The Botanic Gardens have responded to the very pressing appeal addressed to them by Professor Parlatore. From Padua there is a collection of tropical economic plants, and drawings of the famous fossil Palm, *Latanites Maximiliani*, discovered and named by Professor de Visiani. The trunk and leaves were found in an almost perfect state. Modena sends *Cactaceae*, notably a large *Echinocactus Mexicanus*, and twenty species of *Echeveria*. Pisa, under the direction of M. Caruel, contributes a beautiful lot of terrestrial Orchids, including *Orchis longicruris*, *tridentata*, *provincialis*, *Ophrys lutea*, *fusca*, *aranifera*, *bombylifera*, *Serapias cordigera*, *lingua* and *neglecta*. Lucca (Prof. Cesare) exhibits a remarkable collection of woods, and the first plates of the *Ampelographia* of the province of Lucca. Turin (Prof. del Ponte), Orchids and various plants, of which we have already spoken. Sienna (Prof. Attilio) brings a collection of hot-house plants; and Bologna 50 species of *Mammillaria*. Finally, Florence adds considerably to the attractions of the Exhibition with its grand Pandanads, Araucarias, Cycads, Palms (60 species), Tree Ferns, etc.

In the annexes some interesting products remain to be noticed. The garden furniture exhibited by M. Tedeschi, and M. G. Cavalensi; the Strawberries, Bananas, Cucumbers, Raspberries, Asparagus, (blanched) etc. of the Bavarian Society; the Oranges and Lemons from Porto Maurizio, and especially those contributed by M. Orphanides, of Athens; the models of fruits, by M. Garnier-Valetti, which are the most perfect we ever saw; the consignments of forced Peaches and Grapes from the Province of Westland, Holland; the collection of woods from Comte Boutourlin, commenced by Sloane in 1860; Mexican products, from M. Bassi; a collection of fruits and seeds of Soudan, from M. Delchevalerie of Cairo; the woods of the Hellenic flora, from Prof. Orphanides; collection of woods from M. Bicchi; the Fungi of Nice, the work of M. Barla; plans of gardens on plates, by M. Bellora, of Turin; those of M. Pynaert of Ghent; paintings by M. Stroobant of Ghent; the *Illustration Horticole*, complete; the products of *Eucalyptus globulus* and *Iris florentina;* trained fruit trees, by M. Berti of Milan; several heating apparatus and houses, presenting no remarkable features, and other objects too numerous to be noticed here.

All these things have been tastefully arranged by M. Pucci, the head gardener of the city of Florence, who has done so much during the last few years towards the embellishment of the gardens and squares of this city of the fine arts, fully meriting the decoration ofthe Order of the Crown of Italy conferred upon him by the king. We have already mentioned that professor Parlatore was created a Commander of this Order. M. Fenzi and the marquis de Corsi-Salviati were made chevaliers, and M. d'Ancona chevalier of the Order of saints Maurice and Lazare.

Such is the vast subject at which we have been able to give scarcely more than a passing glance in these few pages.

Taken altogether, the Florence Exhibition is a success. If we have failed to discover the southern stamp we had looked forward to in this sunny land — by-the-bye the sun has been chary of his charms during our stay at Florence — we candidly own that we did not expect to find anything like so advanced a state of horticulture. Horticultural Italy is on its trial. The three or four amateurs of the first rank who are found in Florence and furnished the principal contingent represented in the Exhibition, will doubtless give rise to imitators. We shall no doubt see them again in their labours. It has often been said that, " in the countries where nature has done so much, men will do nothing; „ and this voluptuous, though sad theory of the *far niente* has been applied to happy Italy. We have seen that it is not true in this instance. We have found that horticulture is steadily and surely progressing, that the exhibition material bids fair for the future, and that its promoters are men of learning and cordial hospitality. We shall carry away with us the most pleasant remembrances of the floral feast of Florence in May 1874.

Ed. André.

HORTICULTURAL CHRONICLE.

July, 1874.

— The Exhibition at Florence. — On returning from Naples towards the north, we tarried a few minutes at Florence, where we witnessed the remains of the vast Exhibition, now a matter of history. The Marquis of Ancona was busily engaged superintending the removal of the last of the plants; the New Market was fast assuming its original aspect. Professor Parlatore was still confined to his room, not having sufficiently recovered from his illness to venture abroad. He informed us that the Exhibition had been in every respect a success. The balanced account shewed a net profit of £ 1600. These funds will be applied to an appropriate object. The establishment of an experimental garden in connection with the Royal Horticultural Society of Tuscany is under consideration, to be followed by the publication of the proceedings of the Society. We heartily applaud these wise measures, and anticipate the most beneficial results therefrom for Italian Horticulture.

— The Spring Frosts. — We give a summary of the injurious effects of the frosts that we were visited with in the early part of May.

In Belgium, they did some damage, though relatively little, taking into consideration the advanced state of vegetation.

In Italy, we observed that the Orange trees near Genoa, the Vines in Piedmont and Lombardy, and the Mulberry and Chesnut trees as far as Rome, and even Naples, were cut and blackened by the frosts during the nights of the first and third of May. Fortunately vegetation soon overcame the injury, and a fortnight afterwards scarcely a trace of it was to be seen.

But in France the effects were more serious. The East has suffered severely. In the Aube and a great part of Champagne, there are places where the vines will not yield more than five per cent of an ordinary crop. In the Côte d'Or the plains have suffered greater loss than the coast districts. In Tomard, Beaune and Chambertin, two thirds of the crop are destroyed. In the neighbourhood of Tonnere and in the Maconnais, and on both shores of the Rhone and Saone, the damage is very considerable. The Beaujolais loses only a quarter. In the department of the Isere the Mulberry trees are cut. The Ain is very much cut up, the Jura comparatively little, and the Puy-de-Dome has been spared, but Savoy and Ardeche were visited.

The news from the West and South West is good. The Bordelais is scarcely touched, and throughout the whole region of the Olive the loss is recovered. In the Charente it is the same, and the damage done to the fruit trees in Normandy, Picardy and Flandres is unimportant.

Taken altogether, the abundant crops of some districts will in a good measure make up for the losses in others, and there will be no serious deficiency.

— Destruction of the Phylloxera. — Sand is now proposed as an antidote to this pest. M. Espitalier, of Mas-de-Roy, in the Camargue, laid bare the roots of his Vines and put a large quantity of drift sand from the Rhone in the place of a part of the soil removed. In this way the *Phylloxera* perished from suffocation, and 70 per cent of the Vines, that appeared almost dead, have shot forth again with renewed vigour. It is now advised to try this remedy in all places where sand is abundant, just as submersion is still recommended where the means of irrigation are at hand to effect it.

M. Dumas, the celebrated chemist, has also studied this knotty question; and he has recently invented an apparatus for applying the sulphurat of carbon to kill the *Phylloxera* without injuring the Vines. He has, moreover, contrived a new compound, which will serve at once as a manure for the vine, and a poison for the insect. It is the sulpho-carbonate of potassium or sodium, which forms a yellowish, hygrometrical, non-volatile salt, that gradually decomposes under the action of an acid forming sulphuretted hydrogen and sulphide of carbon. Thus we are now able to defy the enemy to a great extent, by using *preventive means*, such as careful culture and the rooting out of infected canes, coupled with *curative means* in the form of flooding or sanding, where practicable, and poison-charged manures, containing the sulpho-carbonate, sulpho-hydrate of ammonia, etc.

— The scenograph. — A short time ago M. Dubroni invented a small, portable photographic apparatus which was very cheap, and met with a ready sale. We purchased one ourselves, but were obliged to give it up, on account the time consumed in preparation and manipulation.

Dr Candèze has now invented the " scenograph „ a much more simple instrument. The plates are prepared before hand. All there is to do after the view is selected, is to expose the plate, and subsequently subject it to the vapour of ammonia. The whole thing is in the shape of an octavo book, and therefore readily portable. It is said to be a genuine discovery. The price is 50 francs, and it may be procured through M. Deyrolle, 23 rue de la Monnaie, Paris.

— Garden Labels. — This weighty question, which is of far more importance than is generally supposed to Nurserymen and Amateur gardeners, has been solved in a most remarkable manner by M. Col's (Clermont-Ferrand, Puy-de-Dome) process. The labels are of zinc, and either indelibly engraved or written by a particular kind of pencil, the writing of which is imperishable. We know at present of nothing better in the way of labels, and we strongly recommend our readers to procure the prospectus and judge for themselves.

— Rare cases of fruiting. — Being on a visit to the celebrated nurserymen, Messrs. Rovelli of Pallanza (whose establishment we shall shortly describe in a special article) during our last trip to Lake Major, we noted the following shrubs and trees that are not often seen in fruit, bearing a profusion of fruit and flourishing admirably in the open air of that delicious climate: *Fortunea sinensis*, *Drimys*

Winteri, *Citrus trifoliata*, *Viburnum suspensum*, *Torrega nucifera*, *Lomatia longifolia*, *Dacrydium laxifolium*, *Ungnadia speciosa*, *Araucaria brasiliensis*, *Pseudolarix Kaempferi*, *Cleyera japonica*, *Gordonia anomala*, *Nandina domestica*, etc.

All of the foregoing trees and shrubs are of a size and vigour that we are little accustomed to see in our climate.

— Exchange of dried Plants. — A Society of Botanists for the exchange of dried plants has been formed in the Department of the Isère, at the head of which is M. Verlot, of Grenoble. The annual subscription is 5 francs. Botanists desirous of enriching their collections will find it a great advantage to join this Society. Persons wishing to become members should address themselves to *Monsieur l'abbé Faure, Professeur au petit Séminaire du Rondeau, près Grenoble.*

— Fruit-modelling in Italy. — At the Exhibition of Florence we saw the most beautiful collection of moulded and painted fruits that it would be possible to bring together anywhere. We candidly confess that we were utterly astonished at finding so perfect a collection of this nature. They were the work of M. Garnier-Valletti, of the Via Doragrossa, Turin. His catalogue, compiled after the most approved French nomenclature, contains the following figures, which speak for themselves: 55 Apricots (an unique and surprisingly rich collection), 8 Almonds, 10 Azaroles, 89 Cherries of the different classes, 5 Quinces, 5 Cornelian Cherries, 40 Figs, 26 Strawberries, 11 Raspberries, 4 Pomegranates, 35 Currants, 33 Gooseberries, 3 Jujubes, 7 Medlars, 157 Peaches and Nectarines, 603 Pears, 332 Apples, 91 Plums, 366 white Grapes, 310 Black Grapes, 111 various Grapes (altogether 677 sorts of Grapes). Such a collection is of inestimable value, and we have hitherto seen nothing so near approaching perfection, not forgetting the admirable specimens manufactured with so much skill by M. Buchetet.

— A New classification of Plants. — M. Alph. de Candolle has recently published a very curious paper, wherein he proposes a new classification of plants, based upon their adaptability to certain climatal conditions. The present distribution of plants over the globe depends upon two sets of causes; former geological epochs, and present physical conditions. The climates of different places have undergone great changes. The mediterranean flora once reached as far north as Paris, and fossil remains prove that the vegetation around London was at some distant period of a tropical character. M. De Candolle has endeavoured to devise a system of classification based upon the constitutions of plants in their relations to heat and humidity.

He proposes five groups, founded upon their physical requirements.

1. Megatherms (Extreme heat with moisture). Plants inhabiting the tropical plains extending to the thirteenth parallel; temperature above 86° Fahr.
2. Xerophiles (Extreme-dry heat). The same temperature, but less moisture. The arid regions, from the twentieth and the thirty-fifth parallel, a very extensive area.
3. Mesotherms (Moderate heat). Temperature ranging from 58° to 68° The Mediterranean and similar regions.
4. Microtherms (Small heat). Temperature about 55° Fahr. The plants of central Europe.
5. Hekisotherms. Plants of the Arctic and Antarctic regions, chiefly herbaceous and cryptogamic.

This classification appears at first very artificial and somewhat arbitrary. But are not all systems more or less so? It would be necessary to follow the author through his arguments to appreciate his dictum, that time affects the constitution in a less degree than their variations in form. In our catalogues, says he, we find a hundred different variations in form for one in earliness. The Date has been cultivated in Italy for upwards of 3000 years, and to the present day does not yield good fruit. Again, gardeners trouble themselves little about the botanical position of a plant, but its native country is a matter of the first import. It is the exotic plant whose period of growth is of shorter duration than those of our climate, that present the greatest difficulties to the cultivator. This is a constitutional and hereditary peculiarity, and is a great though not insurmountable obstacle in the way of their successful cultivation.

It will be seen from the foregoing summary that M. De Candolle's memoir is of equal interest to both botanists and horticulturists. We shall take another opportunity to speak of his conclusions.

— Flowering of Eriocaulons. — These highly curious plants are very difficult to cultivate. A great many species have been introduced from the tropics, but all have been lost again. Their rosettes of leaves give them some resemblance to the *Bromeliaceae*, or large specimen of *Luzula sylvatica.* One, however, in the Luxembourg garden, sent from Brazil, has flowered profusely this year. The seed was sown in fresh moss, and quickly germinated. The plants have been kept in a greenhouse since 1871, and this season one of them has flowered well. The others will probably soon do the same. They will apparently do well if treated in the same way as *Sarracenias.*

— Unpublished Letters of Celebrated Botanists. — M. Roumeguère, a botanist of Toulouse, has for many years been engaged in collecting autographs of ancient and modern botanists. He has already brought together a considerable collection of these interesting and valuable documents in the history of plants; and at the last meeting of the Botanical Society of the Pyrenees he was able to show some extremely curious letters, written by the Younger Linnæus, Gouan, Lamarck, Acharius, Picot de Lapeyrouse, etc., etc. M. Roumeguère now appeals through the press to all those possessing autographs, in order to effect exchanges or purchases. We willingly grant him the publicity afforded by our journal. Persons may address themselves direct to M. Casimir Roumeguère, botanist, Toulouse, France.

— De Tuinbouw-Illustratie. — We have just received another part of the illustrated work published by Messrs. Krelage of Haarlem under the above title. This part, which completes the first volume, contains 66 pages, and engravings of the following plants, accompained by well written articles: *Lilium Wittei*, *Asclepias tuberosa*, *Arisaema ringeus*, *Cineraria hybrida plena*, *Hippeastrun pardinum*, *Begonia boliviensis*, *Sedeni*, *Chelsoni*, *intermedia*, *Veitchi* and *rosaeflora*, *Gerardia querciflora* and *pedicularia*, *Crocosma aurea*, *Lilium Humboldtii* and *L. tigrinum plenum.* We shall take this number up again on another occasion, in reference to a well-written article on Lilies.

— Exhibitions. — *The Glamorganshire Horticultural Society's* twelfth annual show of Plants, Flowers, Fruits, etc. will be held at Cardiff on Wednesday, August 19. About £ 300 will be given in prizes. One of the principal classes

is for twelve Stove and Greenhouse Plants in pots, for which prizes of £ 15 £ 10 and £ 5 are offered. For schedules and other particulars, apply to Henry Bowen, Hon. Sec., Cardiff. — *A grand Horticultural Exhibition* will be held at *Dudley*, in connection with the Worcester Agricultural Society, on August 25, 26 and 27. Apply to Albert Buck, secretary, Worcester. — *A Great International Show of Plants*, Flowers and Fruits will be held in the *Royal Botanic Gardens, Belfast*, on Thursday and Friday, Aug. 20 and 21. Schedules and all other information to be had through the secretaries, R. Atkinson, J. Taylor and C. D. Yonge. — *The Autumn show of the Brighton and Sussex Horticultural Society* will be held in the *Royal Pavilion*, *Brighton*, on September 9 and 10. Two or three valuable cups are offered for competition. Apply to Edward Carpenter, 96 St. James' street, Brighton. — *A General Exhibition of Plants, Flowers, Fruits* and *Vegetables* and of Horticultural accessories and implements will be held at *Lyons* on September 17 to the 20. We may observe that the schedule is a very full one. Apply to M. le secrétaire général du Cercle d'Horticulture, 14, rue de la Bourse, Lyon. — *The Pomological Congress of France* will hold its next meeting (the seventeenth) at *Angers*, in the apartments of the Horticulture Society, Boulevard des Lices, from September 28 to October 3, included. Members of the congress and the societies in connection with it are requested to communicate with M. le Président du Congrès Pomologique, Lyon. Exhibitors should apply to the secretary, M. Millet, Angers. We are told that this will be a very brilliant gathering, which we do not doubt, taking into consideration the importance of the district as a pomological centre and the well known scientific practice of the numerous Angevine gardeners and their traditional hospitality.

— Rose Show at Lyons. — At the time we are writing these lines the exhibition of Roses at Lyons is probably open. We are informed that the commission hope to bring together a numerous and important collection. We noticed that there were thirty classes in the schedule. As soon as the results reach us we shall publish them.

— Fruiting of Torreya Myristica. — This handsome evergreen is now bearing fruit in the nurseries of Messrs. Thibaut and Keteleer, at Sceaux, Seine. So far as our knowledge goes, this is the first time it has fruited in Europe.

— Obituary. — One of the most celebrated of English horticulturists, Mr. John Salter, died on the tenth of May last, aged 76 years. He was well known for the improvements he effected in many florists flowers, such as the *Dahlia*, *Chrysanthemum*, and *Pyrethrum roseum*, and for the introduction of many choice variegated varieties of plants, such for instance as the variegated Lily-of-the-Valley. From 1838 to 1848, be carried on the business of a florist at Versailles, in France, where he raised many of the best varieties of *Chrysanthemum*.

Another English horticulturist of still wider fame as a florist and a writer on floriculture and horticulture, has passed from us. We mean Mr George Glenny, who died on the seventeenth of May last, after a short illness, at the ripe old age of 81 years. He was the originator of garden newspapers in England, and for several years conducted the first that was established, called the *Gardeners' Gazette*. He was also one of the founders of the Gardeners' Royal Benevolent Institution. His writings are numerous, but it is stated that he prided himself most on his authorship of the *Properties of Flowers and Plants*, and he was repeatedly vexed by other writers copying his axioms without acknowledgment. For more than twenty-two years he contributed the horticultural column to *Lloyd's Newspaper*.

On June 18, William Beattie Booth died at the age of 70. He is described as having been one of the most refined and talented gardeners of his day. When about twenty years of age, in 1824, he entered the Horticultural Society's Garden at Chiswick, and gradually rose to the position of garden clerk. He it was who commenced the valuable meteorological observations, taken up and carried on for so long by the late Mr Robert Thomson. After various changes he returned to London in 1858 and accepted the post of assistant secretary to the Horticultural Society, which post be held till the changes and removal to Kensington. He was joint author with Mr Chandler of *Illustrations of the Camelliae*, and author of other scattered papers. In 1825, while still quite a young gardener, he was elected an associate of the Linnean Society.

M. Cordier, one of the most distinguished of French botanists, died at Algiers, June 18, aged 78 years. He rendered great services to botany, and not long since published a splendid work on Fungi. His loss will be deeply felt both by his friends and in scientific circles.

M. Fée, President of the Botanical Society of France, must also be added to our mournful roll of dead. He passed away on the twentyfirst of May, at the advanced age of 85. He was one of the most noted of French pteridologists, and is well known by his many writings on Ferns. Until the last war broke out, he was Professor of botany at the University of Strasbourg. Notwithstanding the solicitations of his pupils, the wishes of his friends, and the inducements held out by the new possessors of Strasbourg he was proof against all, and remained true to his country, and removed to Paris. But the shock was too great for one at his age, and he soon succumbed, carrying with him the respects and regrets of all.

A name brilliant in the world of letters closes our sad necrologue; it is that of M. Jules Janin. He belonged to the science of plants for the love he bore them, for the charming manner in which he sang their praises, and for his noble endeavours to inculcate in youth an appreciation of their beauties. I had the honour of being an inmate of that delightful house at Passy for more than fifteen years. There I saw all that was illustrious in Art and Literature of recent times. And it was he who fostered and guided my first steps in literary labours. His memory is one that will ever remain fresh, and it is a sorrowful pleasure to have the privilege of saying that his goodness and gentleness were superior even to that wonderful talent, which rendered him the delight of two generations. In him I mourn the loss of an excellent friend; and he was one of the best of the writers who could describe the charms of flowers in language worthy of the subject.

E. A.

PL. CLXXIII.

AZALEA MARQUIS CORSI, LINDEN.

NAT. ORD. ERICACEAE.

For the Etymology and Generic and Specific Character see preceding plate CLXXI.

CHARACTER OF THE VARIETY : Compact clusters of bright rosy carmine flowers, with orbicular striped and spotted petals, deeper coloured towards the margine, and purple black in the centre; stamens transformed into almost regular petals of the same tints.

New or rare Plants published in Contemporary Periodicals (¹).

BOTANICAL MAGAZINE.

ARISAEMA SPECIOSUM. — Aroideae. — Tab. 5964. — A tuberousrooted, dioecious plant with deep purple spathes, about a foot long, banded with white inside; spadix with a long filiform appendage. Himalaya.

VERONICA PARVIFOLIA, var. *angustifolia*. — Scrophularineae. — 5965. Shrubby, with reddish wood and pale lilac flowers. New Zealand.

RESTREPIA ELEGANS. — Orchideae. — 5966. Tufted, dorsal sepal extended into a long erect tail, yellow and white spotted with purple. Caracas.

SAXIFRAGA STRACHEYI, Saxifrageae. — 5967. Leaves in rosettes, orbicular. Scapes about 8 inches high, drooping; flowers rose. Himalaya.

DENDROBIUM AMETHYSTOGLOSSUM. — Orchideae. — 5968. Stems three feet high; panicles dense; flowers ivory-white, labellum amethystine violet.

FRITILLARIA TULIPIFOLIA. — Liliaceae. — 5969. Stem six to eight inches high, bearing 3 or 4 leaves. Flower solitary, tulip-shaped, rusty-brown purple within, outer perianth-segments dark glaucous blue streaked with purple outside, inner with a broad glaucous blue band down the back. Caucasus.

CYPRIPEDIUM LONGIFOLIUM. — Orchideae. — 5970. A large and handsome species with long leaves and large yellowish green flowers tinged and marked with purple. Central America.

GREVILLEA ROSMARINIFOLIA. — Proteaceae. — 5971. A robust evergreen greenhouse shrub with linear leaves and pretty blood-red flowers. New South Wales.

ASTEROSTIGMA LUSCHNATHIANUM. — Aroideae — 5972. — Spathe green with brown spots; spadix and anthers scarlet. Leaves pinnatifid; stem streaked with purple.

OLEARIA DENTATA. — Compositae — 5973. — A bushy shrub of ornamental aspect with white and rose flower heads, formerly sent out under the names, *Aster dentatus, tomentosus* and *ferrugineus*. — Australia.

CROTALARIA HEYNEANA. — Legunimosaę — 5974. — An undershrub about two feet high; flowers white and blue. — East Indies.

XIPHION TINGITANUM. — Iridaceae — 5981. — A splendid plant originally discovered by Salzmann in 1825, and since by Dr Hooker at Tangier in 1871. The flowers are of a rich violet purple. — Morocco.

MUNTINGIA CALABURA. — Tiliaceae — 5982. — A handsome stove shrub with white flowers about an inch in diameter. — Tropical America.

LINARIA MAROCCANA. — Scrophularineae — 5983. — Flowers of a beautiful violet purple with a yellow spot on the lower lip. Collected by Dr Hooker on the great Atlas in 1871. — Morocco.

GAULTHERIA FRAGRANTISSIMA. — Ericaceae — 5984. — A greenhouse evergreen shrub with ivory-white fragrant though rather inconspicuous flowers. — Himalaya.

ZAMIOCULCAS LODDIGESII. — Aroideae — 5985. — A highly curious plant introduced as long ago as 1828, and possessing a most remarkable resemblance in its foliage to a *Zamia*. — Zanzibar.

TRECULIA AFRICANA. — Artocarpeae — 5986. — A tree bearing a large edible fruit resembling the Breadfruit, eaten by the Negroes on the coast from Senegambia to Angola. It is the Okwa tree.

AMOMUM MELEGUETA, var. *minor*. — Zingiberaceae — 5987. Flowers pale pink, suffused with yellow towards the centre. Leaves four to six inches long by one broad. — West tropical Africa.

MONANTHES MURALIS. — Crassulaceae — 5988. — A small genus confined to the Canaries and Morocco. Stems short; leaves in rosettes; petals golden yellow speckled with red. — Morocco.

BRODIŒA MULTIFLORA. — Liliaceae — 5989. — A handsome bulbous plant with globular heads of bright blue flowers; perianth-tube ventricose, lobes acute. — California.

MASDEVALLIA LINDENI. — Orchideae — 5990. — See our remarks on Masdevallias exhibited by Mr Denning. The plant figured by Dr Hooker is *M. Lindeni var. Harryana.*

SALVIA TARAXACIFOLIA. — Labiatae — 5991. — A beautiful plant with large rosy flowers discovered in the Greater Atlas by M. Balansa in 1867, and found in the same region by Dr Hooker, who introduced it to Kew.

LACHENALIA TRICOLOR, var. *aurea*. — Liliaceœ — 5992. — A variable plant whose forms are known as *aurea, luteola* and *quadricolor*, the typical plant having handsome golden yellow flowers. A valuable plant for the conservatory in Winter. — South Africa.

(¹) At the request of some of our readers we resume our epitomized review of new and rare plants.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ... J. Linden ...

PL. CLXXIV.

LIVISTONA HOOGENDORPII.

HOOGENDORP'S LIVISTONA.

NAT. ORD. PALMACEAE.

ETYMOLOGY: Dedicated by Robert Brown to Patrick Murray of Livistone, near Edinburgh.

GENERIC CHARACTER: *Flores* hermaphroditi, in spadice spathis pluribus incompletis basiliaribus cincto sessiles, bracteati. *Calyx* trifidus. *Corolla* tripartita. *Stamina* 6, filamenta in discum hypogynum coalita, antherae cordato-oblongae. *Ovarii* carpidia tria, intus cohaerentia. *Styli* coalescentes, stigmatibus connatis vel distinctis. *Bacca* plerumque unica, monosperma. *Albumen* cavitatae ventrali testae radio horizontali ruminatum. *Embryo* dorsalis. — Palmae in Nova-Hollandia et in Asia tropica observatae, caudice mediocri, frondium basibus persistentibus squamato, frondibus flabelliformibus, laciniis apice bifidis, saepe filis interjectis distinctis.

Livistona, R. Brown, *Prodr.*, III, 123. Mart., *Palm.*, t. 110, 111, 145, 146. *Synops.* msc.

SPECIFIC CHARACTER: For the description, see our next number.

The introduction of living plants of the species which formed the type of this beautiful genus L. australis occurred under very curious circumstances.

It happened in this way: when Allan Cunningham was acting as Government botanist in Australia, he sent some cases of plants to Kew, in which his assistants, to save themselves the trouble of seeking or preparing other means of drainage, placed a quantity of Palm seeds. When the cases were unpacked these seeds were found to be in course of germination. And one of those seedlings has now become one of the noblest ornaments of the Palm house at Kew. Another specimen from the same source is, or rather was, for we believe it perished with many other grand plants in the unfortunate conflagration which laid a portion of the building in ruins, at the Crystal Palace; and a third adorns the large house at Herrenhausen, where Mr Wendland has been obliged to lower the tub from time to time, according as the crown rose and threatened to break through the glass.

This lesson was not lost. Mr. Smith, the curator of Kew Gardens, made the fact known, and it has been the means of hundreds of thousands of different Palm seeds reaching this country in a satisfactory condition. Dr. Seemann, who published the foregoing details, frequently made use of this plan in the course of his long travels, and thereby succeeded in introducing a number of beautiful species of this large family.

The Livistonas are natives of Eastern Asia and Australia. Their trunks are usually arborescent and destitute of spines. The leaves are palmate, and their petioles furnished with an abundance of fibre at the base and prickly on the margins. The flowers are hermaphrodite, small, white, in axillary panicles; and the fruit is a drupe, usually unequal sided and of a bright blue colour.

The species of this genus combine many useful properties with a peculiar grandeur and stateliness of habit. *L. Jenkinsiana*, Griff., called *Joko-pat* by the natives of Assam, is planted before the dwellings of all the principal inhabitants. The leaves are used for thatching houses, covering palanquins and boats, and for making the umbrella hats. The wood and leaves of *L. rotundifolia*, Mart., of Java and the Celebes, are employed in various ways. Several species are known, six of which have been introduced into our gardens: *L. australis* (*Corypha australis*, *R. Br.*) *L. chinensis*, Mart. (*Latania borbonica*, Lam.; *L. mauritiana*, Wall.; *L. chinensis*, Jacq.; *Saribus chinensis*, Bl.) *L. Jenkinsiana*, Griff.; *L. olivaeformis*, Mart. (*Saribus olivaeformis*, Hassk., *Chamaerops Biroo*, Hort.) *L. rotundifolia*, Mart. (*Corypha rotundifolia*, Lam., *Saribus rotundifolius*, Blume), *Livistona spectabilis*, Griff.? and lastly *L. Hogendorpii*, of which we here give a portrait.

E. A.

A NEW METHOD OF PROPAGATING ORANGE TREES.

We find a very amusing tale in the last Bulletin of the Horticultural Society of Paris (1874, p. 154). It is worth making more widely known. The narrative is due to M. Hue (Julien), a gardener at Bois-commun, Loiret, who communicated it to the Society.

“ Two amateurs possessed an Orange tree in common. They quarreled, each thought himself alone entitled to the tree, and it became necessary to divide. No better plan could be devised than that of sawing the wretched tree longitudinally into two equal parts. This was accordingly done, and each of the disputants bore off his half, applied the ointment of St. Fiacre to the wound, planted it out separately; and now two healthy trees may be seen, the bark having grown over the exposed wood. ”

After this we need despair of nothing, the Sieur of Caylus, who removed the pith from his Cherry trees in order to obtain stoneless fruit, having found followers a century later!

E. A.

PL. CLXXV.

AZALEA MARSHAL MAC-MAHON, BRUGGE.

NAT. ORD. ERICACEAE.

For the Etymology and Specific and Generic Character see preceding plate CLXXI.

CHARACTER OF THE VARIETY : This magnificent variety bears enormous clusters of truly gorgeous flowers, the largest known in the genus, and frequently exceeding four inches in diameter. The somewhat heart-shaped, emarginate, undulate petals spread widely and are of a brilliant fiery red, the three upper ones tinged and spotted with a clear violet. The filaments are scarlet, and the anthers a very dark blue, some of the flowers shew a tendency to become double from the transformation of the stamens into petals. It is certainly one of the finest varieties hitherto produced.

E. A.

ORNAMENTAL GARDENING.

AZALEAS AT LAKE COMO.

These charming Indian, or rather Chinese, shrubs are tender in our northern climes, and we scarcely know them otherwise than as the inmates of a greenhouse. Art has supplemented nature in her task; and the degree of perfection attained by the gardeners of Ghent in the culture of Azaleas is notorious, whereof Exhibitions both at home and abroad are permanent witnesses. At Florence again we were shown collections that came from Belgium and carried off all the prizes.

But what is far less known, is the beauty they acquire in the open ground, in localities where the climate and soil are favourable to their proper development. In Belgium and France, one species, *A. liliiflora*, grows and resists our Winters with little protection : and there are, doubtless, other varieties that will flourish and flower freely on the south-west coast of England, as a great many do well at Cherbourg, Brest and Nantes.

But he who has not had the opportunity of seeing them in northern Italy, and especially those on Lake Como, has seen nothing! Messrs. Rovelli of Pallanza, Lake Major, cultivate nearly all the Belgian and English varieties. They form dwarf bushes, and flower with surprising profusion. And on an eastern slope they succeed best, as they are not exposed to the fiercer rays of a scorching sun.

Nevertheless, the results obtained about Lake Como are still more remarkable. Above all, the Azaleas at the Villa Carlotta should be seen. This estate is at Cadenabbia, opposite Bellagio, and was formerly known as the Villa Sommariva. Here also are some valuable works of art, amongst other some bas-reliefs by Thorwaldsen, the Danish sculptor, and the famous statues by Canova, as Love and Psyche, the Magdalene, etc. We shall give a description of this beautiful estate at another time.

The newer part of the gardens, near the village of Cadenabbia, have recently been improved and embellished under the superintendence of the gardener, M. Giuseppe Morganti. A bank of Azaleas particularly attracted our attention, and we intended saying something about them, but our pen is too feeble to describe their splendour when in full bloom. These repeated clumps of shrubs, clothed with innumerable flowers, like a mantle of gauze of a thousand tints, had a most charming effect. All of the varieties flourish equally well. They naturally assume a roundish outline, but without the stiff uniformity and regularity of our greenhouse specimens.

We have only one word to add; let every one go and see this forest of Azaleas, for no description can give an idea of their splendour in the month of April. E. A.

Grafting Camellias in the Open Ground.

The transformation of old or poor varieties of Camellia in the open air has always been a problem difficult to solve, in consequence of the young graft drying up, in spite of all precautions for its protection.

The discovery of a simple and sure method of grafting these subjects in the open air would therefore be a great boon. M. Cornélis, Viscount Vigier's able gardener, has been so fortunate as to hit upon a successful plan.

His mode of procedure is as follows : — About the middle of February the large Camellias are cut in, close or otherwise, according as it may be, whether a complete or only a partial transformation is desired. In cutting the branches back care is taken to preserve the pyramidal shape of the bushes by leaving the lower ones longer, gradually diminishing in length upwards.

In each of the principal branches thus cut off, one or two grafts are inserted, on the wedge system, securely bound up, and overlaid with the grafting wax, *Lhomme-Lefort*, in the usual manner. A small bottle with a large neck is then slipped over the whole, the open nozzle being stuffed with damp moss, and a piece of paper tied over the upper part of the bottle to prevent the sun from scorching the graft, but at the same time permitting sufficient light to enter. Thus the graft is placed in a medium in every way favourable to its complete junction.

In this way M. Cornélis has already changed many old Camellias into choice varieties, and he intends going through the whole of his collection, reforming misshapen trees and replacing inferior varieties.

The accompanying wood-cut will assist our readers in understanding the foregoing details of M. Cornélis method, and be the means, we think, of its general adoption.

E. A.

L'Illustration Horticole.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, pub.

PL. CLXXVI.

GALEANDRA DEVONIANA, LINDLEY.

NAT. ORD. ORCHIDEAE.

ETYMOLOGY: from γαλῆ, a helmet, and ἀνηρ a man-anther, in reference to the anther crest.

GENERIC CHARACTER: *perianthium* patens, petalis sepalisque subaequalibus ascendentibus. *Labellum* infundibuliforme indivisum vel obsolete trilobum, calcari intus lamellis auctum. *Columna* erecta membranaceo-alata, clinandrio declivi. *Pollinia* 2, postice excavata, caudicula brevi, glandulae brevi divergenti bilobae adnata. *Herbae* terrestres et epiphytae, caulibus foliatis, racemis terminalibus (LIND., *Sert. Orch.* 37).

SPECIFIC CHARACTER: *caulis* erectus simplex teres polyphyllus; *folia* lanceolata, trinervia; *racemus* sessilis erectus multiflorus; *labelli* lamina ovata obtuse crenulata, lamellis 4, pone basin; *antherae* crista carnosa rotundata pubescens.

Galeandra Devoniana, Lindl., *Sert. Orch.* 37.

This handsome Orchid was first described by Dr Lindley, and originally discovered by Schomburgk on the banks of the Rio Negro, a tributary of the Amazon, near Barcellos or Marina, and also near Harendauar or Podrero. It was growing in large tufts, from 10 to 12 feet in circumference, either upon trees, and chiefly upon the stems of *Mauritia aculeata* bordering the river, or upon the ground, where there was vegetable mould. Schomburgk speaks of it in enthusiastic language; and it well merits the praises he bestows upon it. Our plate faithfully renders the large racemes of delicately and purely tinted flowers of this beautiful plant. But one can scarcely imagine the rich abundance of flowers on its long, slender inflorescence, often taller than a man, purple at the base and green upwards, and especially striking when hanging from a tree. Spruce re-discovered it in the same habitats where Schomburgk found it. Since that period, now some years ago, it has several times been introduced in a living state, but it has, nevertheless, nearly or quite disappeared from our gardens. M. Linden, who knew the localities well where it grew, sent one of his travellers thither, who was so fortunate as to send it home in a good state. We have seen this lot of plants; they are in good health, and will soon be dispersed to enrich the great collections. E. A.

PHYLLOXERA VASTATRIX AND AMERICAN GRAPE VINES.

It is not so generally known in England that this scourge, which is desolating the Vineyards of the south of France, appears to be powerless against the American Vines. There is little doubt that up to the present time, at all events, the American Vines have resisted its attacks, though there are some persons who question their complete immunity, and it is well not be too positive on this point. But M. Planchon's opinion that this insect came to us from America has recently been satisfactorily verified. Coupled with this assertion, M. Planchon advanced the suggestion that we should fight the enemy by planting American in the place of European Vines.

At Roquemaure, Gard, a M. Borty cultivated a vineyard which was overrun with mildew. About the year 1862 — six years before the appearance of the *Phylloxera* was recorded — he tried a small plot with American canes, in all something like 150, some rooted and others simply cuttings. At the present time, after a lapse of *twelve years*, these canes are all in vigorous health, whilst all the European vines immediately around them have fallen a prey to the *Phylloxera*. The American varieties planted by M. Borty are: *Clinton*, *Post Oak*, *Emily*, *Ive's Seedling*, *Clara* and *Mustang*. He also possessed the *Delaware* and *Isabella* which became victims of the plague, though elsewhere, as at Bordeaux, and in America itself, these varieties remained proof against it.

The explanation of these observations seems to be this, that this small plot of American canes, planted by M. Borty, formed the centre from which the *Phylloxera* has spread in the Gard, just as M. Laliman's vines started it in the vicinity of Bordeaux.

Here then, we think, is a fact of sufficient importance to be carefully considered in connection with the planting of American Vines on a large scale. Moreover, we still think that the rage for American Vines is carried too far, little care being exercised in the selection of suitable varieties. Most likely the recommendation alone of a scientific man so deserving of confidence as M. Planchon, would serve as a sufficient pretext to many speculators upon which to base their operations; a not unusual circumstance in similar cases. Not all of the American varieties are suitable for our purposes; few, indeed, being of the same value as the *Scuppernong* and some others. Whilst keeping the main object in view, namely, the destruction of the scourge or the discovery of new and vigourous races to replace the old, we urge the necessity of exercising the greatest caution and prudence.

VIATOR.

MISCELLANEOUS.

EXHIBITION OF THE SOCIÉTÉ ROYALE DE FLORE AT BRUSSELS.

This Exhibition, opened April 6, was of twofold interest to the public, inasmuch as it offered the much coveted view of new and rare plants and the inauguration of the splendid new building of the New Exchange, constructed by the architect, M. Suys. It was hoped that the King and Queen of the Belgians would grace with their presence the ceremony of celebrating this double event; but Their Majesties were represented by the Count and Countess of Flanders. The Count of Ribeaucourt, President, and M. Linden, Vice-president, did the honours of the exhibition to the Royal visitors.

The Amaryllises sent from Ghent by M. Van Houtte were greatly admired, as were also M. Linden's New Plants, Palms, Tree Ferns, etc. etc. Amongst flowers there was a great profusion of Roses, Hyacinths, Calceolarias, Tulips, Cinerarias, Rhododendrons, Camellias, Pelargoniums, and Orchids. Unfortunately, the Azaleas and Rhododendrons were very backward, owing to the cold weather, which had greatly retarded their flowering.

The special class of this show was devoted to Ornamental Stove and Greenhouse Plants. The first prize was unanimously awarded to M. Linden, and M. Lemonnier gained the second.

Amongst the principal attractions of the Exhibition was a group of artificial flowers from Madame Lignier of Brussels, who justly deserved the valuable medal awarded to her. A few Pears and Apples, and a quantity of garden ornaments and furniture, were amongst the accessories to this Exhibition, which would have been far more brilliant if it had taken place a month later.

We give below a list of the New Plants exhibited by M. Linden, which gained him the first prize. Many of them have already formed the subjects of articles in this Journal, and others will appear in their turn.

CULTURE OF BORONIAS.

These beautiful greenhouse plants are too little known, and where they are known, often badly grown. They are all indigenous to Australia, and may be ranked with the most attractive of the numerous bright forms of that rich flora.

The general appearance of the plants in or out of flower is pleasing, being devoid of that stiff upright habit which many hard-wooded shrubs possess. They are also plants not so liable to get into bad condition at the roots as many greenhouse subjects, and with good treatment are moderately fast growers, continuing to flower freely and regularly for a number of years. Being free rooting plants they should never be allowed to suffer for pot room, for if they do it is a difficult matter to get them to move freely afterwards. In selecting plants to commence with, it is necessary to obtain such as are free growing, even if small, in preference to mere size. They are usually grafted, but will do equally well on their own roots. I have had them both ways, but never could see sufficient difference to warrant preference. They succeed best in good peat, not necessarily so fibrous as some more delicate plants require. Use one sixth or seventh part of sand, according to the description of peat, which for plants, say in six-inch pots, should be broken in pieces about the size of broad beans, and well mixed with the sand.

After potting, place them in a house or pit where they can receive a night temperature of 45°, and give no side ventilation for some three or four weeks. Keep the stage on which they stand sprinkled with water in bright weather; but if potted early they will not require shading.

By midsummer they will have filled their pots with roots, and require pots two or three inches larger. Move them carefully without disturbing their roots, more than is unavoidable, as at this sunny time of the year they will feel it much more than at their first potting, and will require shading in bright weather for three or four weeks, keeping the outsides of the pots and the stage damped down three or four times a day. The house should also be kept a little closer until they get hold of the new soil; and when they appear to have done so, syringe overhead every evening, closing the house about five o'clock.

Continue this treatment until the beginning of August, after which discontinue the closing, leaving the top ventilators open all night; but still syringe overhead for a few weeks longer. Towards the end of the month turn them out of doors for a fortnight or three weeks to ripen their growth, as they are plants much subject to mildew, and unless they receive this open air treatment will be difficult to manage through the winter. *B. serrulata*, however, should not be fully exposed, as its foliage is liable to burn and turn yellow if so treated. By the middle of September remove the plants to their winter quarters, which should be in a good light house near the glass, with a similar temperature to that before recommended. Give less water during the short days, and comparative rest of the plants, but they must never be allowed to get too dry, or their leaves will suffer.

They are all subject to brown scale and aphides, their small leaves rendering the former insect difficult to remove. The best remedy is to wash them all over with Fowler's insecticide, 4 ounces to the gallon of water, applying it with the syringe at a temperature of 90°. For aphides fumigation is the best course to follow, smoking them two or three times at intervals of ten days.

The four following are the best.

B. pinnata, the very best Boronia, and one of the most desirable plants in cultivation; but it is subject to mildew, the earliest traces of which should be treated with sulphur.

B. Drummondii, less vigorous grower and of more slender habit, requiring less pot room; otherwise the same treatment.

B. tetrandra, a stronger grower than either of the preceding, with larger leaves and paler flowers.

B. serrulata, a smaller growing plant of a different habit from the foregoing. It has the brightest coloured fragrant flowers, covering the plant from April to June. It must be closely watched for scale and mildew. (Condensed from an article by M. T. Baines in the *Gardeners' Chronicle*).

HORTICULTURAL CHRONICLE.

August, 1874.

— Exhibition at Lyons. — We announced in our last number the Exhibition of Roses that should have taken place in July. Unfortunately the hail played such havoc throughout the district, that it was found to be quite impossible to hold any exhibition whatever. However, the Lyonnaise gardeners are not be discouraged by this untoward circumstance, having organised a general horticultural exhibition to be held in September, from the 17 to 20, inclusive, which will also be open to foreign exhibitors. We call upon our colleagues to support them. We shall be there to report from a personal view, and also to undertake the duties of a judge. Applications should be addressed to the secretary, M. E. Rohner, 60, Avenue de Noailles, à Lyon, before September 10.

— Exhibition at Liege, Awards. — A correspondent has communicated the results of the competitions at that magnificent exhibition, which was held on July 5 and 6.

Grand Prize. A gold medal, presented by His Majesty the king of the Belgians, to M. Gantreau, Rosegrower, of Brie-Comte-Robert, France, for collections of Roses amounting in the aggregate to the enormous number of 1313 expanded flowers.

Grand Prize given by the Lady Patronesses. A gold medal, to M. Scipion Cochet of Suisnes, France, for collections of Roses, including 1085 flowers, and one collection containing 540 varieties.

Grand Prize the gift of Her Majesty the Queen of the Belgians, jewels, to M. Nizet, Rose grower at Liege, for 425 cut Roses, including one collection of 200 varieties.

One exhibitor alone, M. D. Guerin, of Servon, near Brie-Comte-Robert, sent 2500 flowers of the Rose du Roi.

In the class for Orchids the awards were:

Gold medal of the Federation, value 500 francs, to M. Lamarche de Rossius, of Liege, for 30 exotic Orchids.

Grand Prize of merit (2nd) to M. Jules Pirlot.

The class for New Plants produced amongst other interesting things in the collections sent by Messrs Jacob Makoy: *Adiantum ambulator*, five varieties of *Maranta*, *Tillandsia juncea*, *Alocasia Gibsoni* and *Fagraea Glaziouana*. The Grand Prize given by the Government fell to the same exhibitor for his Palms. Such are the principal results of the Exhibition; we regret want of space prevents us from giving a more detailed report.

— Phylloxera again. — The large prize of 300,000 francs offered by the French Government for the discovery of an effectual method of destroying the *Phylloxera*, has given rise to an overwhelving flood of proposals and plans for its destruction, each remedy rivalling all others in its marvellous properties. One of them appears to be very well worth a trial. It is the cultivation of Hemp or Tobacco in rows between the vines. As the growth of this valuable solanaceous plant would be attended with difficulties for the exchequer, M. Brongniart, who spoke on this subject at the academy of sciences, suggested that the Thorn apple, *Datura stramonium*, another strong growing solanaceous plant, should be employed instead. We, ourselves, dare offer no opinion as to the practical utility of the various means proposed, but we must own that we have at present very little confidence in them.

— National reward to M. Pasteur. — The beautiful works by this learned academicion on the diseases of the silkworm and other subjects are well kwown. The French National Assembly has recently done a very graceful act in conferring on M. Pasteur, whose pecuniary circumstances were anything but flourishing, an annual pension of 12000 francs for life, as a national reward for his services to his country.

— Botanical exploration of Tunis. — M. N. Doûmet Adanson, of Montpellier, has just returned from a botanical journey through the state of Tunis. Important results have accrued from his travels. His investigations were mainly directed to the forests of *Acacia gummifera*, that are be found in the south, following in this the instructions of the academy of sciences.

— Flora Brasiliensis. — This grand work is approaching completion. Part 60 contains three orders worked up by Engler, namely, *Olacineae*, *Icacineae* and *Zygophylleae*. Part 61 includes the *Euphorbiaceae*, by Müller; 62, the *Compositae*, by Baker, and 63, the *Polygaleae*, by Bennett. Owing to the energy brought to bear upon this splendid work by Mr. Eichler, we may venture to hope to see this monument of botanical science devoted to the Brazilian empire, speedily accomplished.

— Botanical competition. — The Academy of Sciences of Caen has recently proposed to offer a prize of 4000 francs for the best essay on the *Function of the leaves in the growth of plants*. Competitors must not only give a general view of the present state of science, so far as this question is concerned, but this must be supplemented by actual observation and experiment and any new facts that come to light in the course of the researches. The essays must be presented at the Academy before January 1, 1876.

— Canna iridiflora. — Not long ago we requested our readers to inform us, if possible, where we could procure *Canna iridiflora*, a very handsome Peruvian species, now extremely rare, if indeed, it exists at all, in our hot houses. M. J. Sisley, of Montplaisir, Lyons, and the Comte de Lambertye, of Chaltrait, Marne, wish to join us in our appeal and in our efforts to recover this beautiful plant. M. Sisley adds that be would be extremely glad to have *C. iridiflora rubra*, which, if we mistake not, was one of the finest acquisitions of the lamented M. Année, the celebrated raiser of Cannas.

— Vegetable Physiology. — M. Naudin relates a very curious fact in vegetable physiology, in connection with certain meteorological conditions. It occurred at Collioures. We extract from the *Journal d'Agriculture pratique*, July 1874. In April of 1873, that is to say fifteen months

previously, he planted a specimen of *Citrus buxifolia*, from China, in his garden, which gave no signs of life until the event happened that is narrated below; it even lost all its leaves latterly. On the twenty third of June a flood of rain fell, and a week afterwards the Citrus was covered with leaves; an extraordinary case of revival!

We have lately witnessed a similar instance of recovery from a torpid state. In the winter of 1872-73, we purchased a specimen about 5 feet high of *Abies Nordmanniana*, at Angers, and carefully replanted it. From that time till now, a period of one year and eight months, it has neither made any growth nor lost its leaves, notwithstanding repeated waterings and extreme changes in the weather. It is only within these last few days that it has revealed a green bud. How can this prolonged torpor and sudden re-animation be accounted for? A question more easily asked than answered.

— Obituary. — Botany has recently lost one of its votaries in M. K. F. Meissner, who died May 2, after a long illness. He was born at Berne in 1800; and was for many years professor at Basle. His principal work is his *Plantarum vascularium genera*. He also published a monograph of the genus *Polygonum*, and actively laboured on De Candolle's *Prodromus* and the *Flora Brasiliensis*.

M. Hahn, who was known to several botanists through being attached to the last French exploring expedition in Mexico, died in that country last September. He was a native of Esenburg in the Hartz Mountains. M. Fournier dedicated several ferns to him, and some other plants bear his name as *Disemma Hahni*, and *Gesneria Hahni*.

Ed. André.

FLORA OF SAN REMO.

In the study of Natural History, and more particularly Botany, good figures always furnish the best and surest guide to the determination of species. Since Dodonæus and Matthiolus, all the works of any note that have been published owe the greater part of their value and use for scientific purposes to engraving or lithography, and to the art of the draughtsman and painter.

But it was left for photography to reproduce nature in all its beauty and truth, and this wonderful application of physico-chemical agencies is being more and more utilized in the study of Plants.

We recently saw a remarkable instance of its use when passing through San Remo, a small town of Liguria, in Italy, not far from Nice, and celebrated for its Palm trees and its agreeable climate. M. Pietro Guidi, a photographer, assisted by a distinguished botanist, M. Panizzi, commenced four years ago taking and publishing the portraits of the rare and beautiful plants of the Ligurian coast. The photographs are of large size, beautifully printed, and altogether well got up. The price is 20 Italian *livres* (about fourteen and sixpence) for ten species. We fell sure that many botanists who may wish to have exact representations of rare or doubtful species, will avail themselves of this publication. To assist them in their choice, we append a list of those species already published and from which a selection can be made. On the appearance of a new set we shall have something more to say respecting the work of Messrs Guidi and Panizzi, and in the meantime we warmly recommend it to our readers ([1]).

E. A.

([1]) Address Messrs Guidi and Panizzi, San Remo, Italy.

List of the Plants of the Flora of San Remo, Italy, photographed and published by Messrs. Guidi and Panizzi.

Anemone Pavonina, *DC.*
Ranunculus muricatus, *L.*
Nigella damascena, *L.*
Papaver hybridum, *L.*
Hypecoum procumbens, *L.*
Fumaria parviflora albiflora, *Moris.*
Cheiranthus Cheiri, *L.*
Matthiola sinuata, *R. Br.*
Moricandia arvensis, *DC.*
Koniga halimifolia, *Reichb.*
Cakile maritima, *DC.*
Isatis tinctoria, *L.*
Cistus Monspeliensis, *L.*
Helianthemum roseum, *DC.*
Polygala rosea, *Desf.*
— Monspeliaca, *All.*
Silene fuscata, *Link.*
— sericea, *All.*
Moehringia frutescens, *Panizzi.*
Lavatera maritima, *Gouan.*
— punctata, *All.*
Hypericum tomentosum, *L.*
Geranium tuberosum, *L.*
Cytisis triflorus, *Hérit.*
Ononis Cherleri, *Desf.*
Anthyllis tetraphylla, *L.*
— Barba-jovis, *L.*
Medicago marina, *L.*
Trigonella prostrata, *DC.*
Lotus cytisioides, *All.*
Tetragonolobus purpureus, *Moench.*
Psoralea bituminosa, *L.*
Astragalus pentaglottis, *L.*
Scorpiurus subvillosa, *L.*
Securigera coronilla, *DC.*
Coronilla stipularis, *Lamck.*
Lythrum Graefferi, *Ten.*
Tamarix africana ligustica, *DNtrs.*
Paronychia nivea, *DC.*
Tordylium apulum, *L.*
Orlaya maritima, *Koch.*
Lonicera implexa, *Ait.*
Crucianella angustifolia, *L.*
Rubia peregrina, *L.*
Galium saccharatum, *All.*
Buphthalmum aquaticum, *L.*
Pulicaria odora, *Reichb.*
Phagnalon rupestre, *DC.*
— saxatile, *Cass.*
Evax pygmæa, *Pers.*
Plagius virgatus, *DC.*
Diotis candidissima, *Desf.*
Achillæa ligustica, *All.*
Pyrethrum Miconis, *Moench.*
Senecio Cineraria, *DC.*
Carlina lanata, *L.*
Atractylis cancellata, *L.*
Staehelina dubia, *L.*
Centaurea crupina, *L.*
Urospermum Dalechampii, *Desf.*
Vincetoxicum contiguum, *Gren. et God.*
Vinca acutiflora, *Bertol.*
Convolvulus althæoides, *L.*
— pseudo-tricolor, *Bertol.*
Convolvulus evolvuloides, *Desf.*
— pentapetaloides, *L.*
Omphalodes verna, *Moench.*
Cerinthe aspera, *Willd.*
Lithospermum apulum. *Vahl.*
Linaria triphylla, *Mill.*
Stachys maritima, *L.*
Ballota spinosa, *Link.*
Teucrium polium, *L.*
Ajuga Iva, *Schreb.*
Vitex Agnus Castus, *L.*
Coris Monspeliensis, *L.*
Primula marginata, *Curt.*
Globularia alypum, *L.*
Statice Avei, *D. Ntrs.*
— pubescens, *DC.*
Plantago Bellardi, *All.*
— Coronopus Spica ramosa.
Polygonum maritimum, *L.*
Rumex Bucephalophorus, *L.*
Osyris alba, *L.*
Euphorbia trinervis, *Bertol.*
— spinosa, *L.*
— Characias, *L.*
Crozophora tinctoria, *A. Juss.*
Posidonia Caulini, *Koning.*
Arum dracunculus, *L.*
Arisarum vulgare, *Rich.*
Barlia longibracteata, *Parlat.*
Crocus versicolor, *Ker.*
Sternbergia lutea, *R. et S.*
Pancratium maritimum, *L.*
Queltia incomparabilis, *Haw.*
Narcissus papyraceus, *Gawl.*
— Panizzianus, *Parlat.*
— aureus, *Lois.*
— Bertolouii, *Parlat.*
— italicus, *Sims.*
— elatus, *Guss.*
— Tazzetta, *Lois.*
— varians, *Guss.*
— canaliculatus, *Guss.*
— Remopolensis, *Panizzi.*
Smilax aspera, *L.*
— b. Mauritanica, *Desf.*
Tulipa precox, *Ten.*
— Clusiana, *Vent.*
Asphodelus fistulosus, *L.*
Lilium pomponium, *L.*
Nectaroscilla hyacinthoides, *Parl.*
Allium triquetrum, *L.*
— roseum, *L.*
— nigrum, *L.*
— subhirsutum, *L.*
Hyacinthus orientalis, *L.*
Bellevalia romana, *Reich.*
Schoenus mucronatus, *L.*
Andropogon hirtus, *L.*
— pubescens, *Vis.*
Phalaris coerulescens, *Desf.*
Agrostis pungens, *Schreb.*
Lagarus ovatus, *L.*
Stipa tortilis, *Desf.*
Koeleria villosa, *Pers.*
Sclerochloa maritima, *Link.*

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

PL. CLXXVII.

RONNBERGIA MORRENIANA, LINDEN & ANDRÉ.

MORREN'S RONNBERGIA.

NAT. ORD. BROMELIACEAE.

ETYMOLOGY : A new genus, dedicated to M. Ronnberg, director of the Belgian Ministry of Agriculture.

GENERIC CHARACTER : *perianthium* superum; *calyx* herbaceus, tubulosus, lobis 3 imbricatis inaequilateralibus, dextrorsum alatis; *corolla* in calycis tubo inserta; *petala* 3 unguiculo nudo in tubum elongatum incurvata; *limbus* patulus, brevis; *stamina* tubo calycino inserta, 3 oppositi sepala, omnia libera, inserta; *antherae* dorsifixae, erectae; *stylus* erectus, staminibus brevior, stigmatibus 3 contortis; *ovarium* inferum, breve; *placentae* disciformes apicilares; *ovula* permulta, funiculo longiore pendula; *raphe* chalaxam versus in cornu brevi deflexo productus. — Genus inter *Disteganthus* Lem. et *Macrochordion* De Vriese inscribendum, 1° calyce herbaceo sepalis dextrorsum alatis, 2° ovulis numerosis chalaza cornigera facile distiguendum.

Ronnbergia, *genus novum*. Morren et André.

SPECIFIC CHARACTER : herbacea, glabra; *folia* primum erecta, mox limbo patulo, ovato subcordato acuminato acuto furfurascente, lobis basilaribus v. auriculis inaequalibus obliquis, in petiolum canaliculatum abrupte contracto, 34 cent. longa, 10 cent. lata, supra laete viridia zonis maculisque intensioribus subepidermidis; *flores* in paniculam thyrsoideam densam erectam congesti, bracteis vaginantibus magnis inaequalibus longe acutis erectis furfuraceis; caetera generis.... (vide supra). — Nova-Granata, 1873. — Ad vivum descripsi in hort. Lind. — ÉD. A.

Ronnbergia Morreniana, Linden et André, *sp. nov.*

Disteganthus Morrenianus, Lind. Catal.

It is not only the general appearance of the plant we figure and describe to-day that has led us to consider it the type, of a new genus. There are other far more weighty reasons. On its arrival at M. Linden's establishment, it was referred by our predecessor, Lemaire, to *Disteganthus*, but it soon became evident that it could only enter this genus through the species named *D. Scarlatinus*, Hort. Lind. Indeed it differs too widely from the lateral inflorescence of *D. basilateralis*. Lemaire, to say nothing of the totally different habit, and blue not yellow flowers, not to strike us at once. If we had the flowers of *D. scarlatinus* before us we might have determined whether they presented any further differences, or whether it possesses the dextrorse wing of the calyx-lobes, and the horny funicular prolongation of the chalaza that characterise our new genus, meanwhile we were unable to admit the generic identity of the two plants.

After having taken the opinion of our friend Morren, we decided that the characters offered by this plant were sufficiently distinctive to form a new genus.

A diagnosis will be found above, and the accompanying picture will give a still better idea of the shape and position of the different parts of the flower.

As soon as *Disteganthus scarlatinus* flowers at Ghent again, we shall carefully re-examine it, and then we shall be able to say whether it should form a second species of *Ronnbergia*.

The peculiarly beautiful habit of this Columbian novelty, together with its curious spots and transvere bands of a darker hue on the bright green of its leaves, the bracteate inflorescence and blue flowers striped with white, will ensure it a great share of favour.

E. A.

LIVISTONA HOOGENDORPII.

To the article which we gave at page 108 of the present volume we may add the following description of *Livistona Hoogendorpii*, taken from a specimen about ten years old. A tall slender tree, trunk marked with scars after the fall of the petioles, which are triangular at the base and furnished with a dense rufous network, very much dilated and suddenly narrowed, trigonous and rounded below, furrowed on both sides of the ribs and somewhat flattened above, 3 to 6 feet long, thin towards the edges, of a reddish brown at the base passing into olive green and speckled upwards, lateral spines in two rows, very stout, recurved, from one and a half to two inches apart, smaller and closer together towards the summit, horny, enlarged at the base, stiff and very sharply pointed, 8 to 12 lines long. Limb sub-orbicular fan shaped, erect, afterwards spreading, 4 to 6 feet in diameter, with a moderately deep sinus at the base, divided into 10-12 lobes, each with 5 to 7 plaits, folded at the base, linear-acute at the apex, of a deep lustrous green, slightly furfuraceous as well as the summit of the petiole.

At first sight, *L. Hoogendorpii* might easily be mistaken for *L. Jenkinsii* of Griffith, but in addition to the difference in habitat, the former in Sara and the latter in Assam, an examination revealed the following distinctions in *L. Jenkinsii:* petiole less deeply furrowed, more spreading at the base, and less abruptly narrowed, spines closer together, slanting, very sinuous, having a much shorter basal swelling or tubercle, alternating with another series of much smaller tubercles; petiole olive green, not reddish, at the base; limb more completely orbicular with a very acute almost closed sinus, plaits not collected in phalanges of 5 to 7, but all free and spreading, broader and divided about one third or half through the blade of the adult leaf.

We have not seen either the flowers or the seeds of these two species, which would probably afford additional differential characters. E. A.

PL. CLXXVIII.

CATTLEYA GIGAS, LINDEN & ANDRÉ.

GIANT CATTLEYA.

NAT. ORD. ORCHIDACEAE.

ETYMOLOGY : After W. Cattley, a zealous English Horticulturist.

GENERIC CHARACTER : *Perigonii* foliola exteriora membranacea v. carnosa patentia aequalia, interiora saepius majora. *Labellum* cum gynostemate articulatum cucullatum integrum v. trilobum gynostema involvens. *Columna* clavata elongata semiteres marginatum. *Anthera* 4-locularis carnosa, septorum marginibus membranaceis. *Pollinia* 4 caudiculis totidem replicatis. Herbae *Americanae tropicae epiphytae pseudobulbiferae*, foliis *solitariis geminisve coriaceis*, floribus *terminalibus magnis speciosis saepe e spatha magna erumpentibus*. Endlicher genera plantarum 1380.

SPECIFIC CHARACTER : *pseudobulbi* robusti elongati sulcato-compressi; *folia* oblonga, 20-25 cent. longa, 6 cent. lata, obtusa, carnosa, nitida; florum *vagina* magna spathulata, 10 cent. longa, *scapus* erectus 1-2 florus (et ultra); *bracteae* semi-amplexantes triangulares acutae pallidae; *flores* maximi, 20 cent. diametro; *sepala* subaequalia lineari-lanceolata undulata apice decurvata mucronata, 12 cent. longa, 1 cent. lata, pallida lilacina; *petala* 10-12 cent. longa, 25 millim. lata, ovato-unguiculata undulata, pulchre lilacina; *labellum* maximum, 12 cent. longum, superne carinato-infundibuliforme, mox expanso-deflexum, ovato-emarginatum aut bilobum, vivide violaceum, marginibus fimbriatis, interne pulcherrime radiato-lineatum, maculis duabus lateralibus lunatis aureis ad faucem depictis; *gynostemium* lilacinum rostello atroviolaceo.

In Nova-Granata. — Ad vivum descripsi in horto Lindeniano. — Ed. A.

Cattleya gigas, Linden et André, *Illustr. hort.*, 1873, p. 70.

This is a truly gorgeous plant, one of the most beautiful, if not the most beautiful of the genus. We had the pleasure of seeing it in flower at M. Linden's last July, and we must say, that in spite of all the art exercised by the painter to reproduce its colours, it is impossible to give an idea of its magnificence.

It was introduced from New-Granada two years ago by M. Linden, who sent it out last year.

The pseudobulbs are of luxuriant growth, as indeed is the whole plant; they are erect, oblong or club-shaped and furrowed. Leaves from 7 to 10 inches long and 2 to 2 inches 6 lines broad, obtuse at the apex, of a beautiful shining green. The spathe or sheathing bract that accompanies the inflorescence is spathulate and about 4 inches long. Flowers one or two on each scape or sometimes as many as seven or nine. Bracts at the base of the peduncle and pedicels cylindrical, bifurcate at the summit, half-sheathing, triangular, pale green. The enormous, magnificent flowers often nearly eight inches in diameter, have narrow, oblong equal sepals about four inches long and five to seven lines broad, of a very delicate lilac colour. The petals are two or three times as broad, and of about the same length and colour. Labellum very large, about four and a half inches long, at first keeled above and closed at the base, then suddenly opened and reversed forming a funnel, recurved backwards, ovate, subcordate or bilobate at the extremity and fringed on the margin. Its prevaling hue is a rich brilliant violet, the anterior part tinged with lilac and striped with a deeper shade, which is gradually lost in faint rays in the interior of the throat and the paler fringe of the margin. At the entrance to the white throat, on the turned-up margins, there are two crescent-shaped, pure yellow regularly formed figures. The column is short club-shaped, delicat, lilac, like the oval beak which is of a deep violet in the center.

Not to extend the description, *Cattleya gigas* is really one of the most gorgeous Orchids in the world. E. A.

THE KITCHEN GARDEN AND ORCHARD.

DESTRUCTION OF THE BLACK LOUSE OF THE MELON.

For about fifteen years our early melons and cucumbers at Chaltrait were more or less injured by the depredations of the black louse, which it is impossible to eradicate entirely, even by weekly fumigations with tobacco. During the Winter of 1872—3 and the spring of 1873 the idea struck me, and instead of the regular dung hot-bed, I had a layer of fresh tan about an inch thick spread over the dung, and the mould placed upon that.

The success of the plan was complete; not a single louse made its appearance; which I attribute to the odour of the tannic acid. This is an easy inexpensive remedy, and I recommend others to try its efficacy. Tan may be had anywhere, and so little is needed for each melon plant, that the expense is no consideration.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

L'Illustration Horticole.

J. Linden, pu.

PL. CLXXIX.

TILLANDSIA (VRIESIA) TESSELLATA, LINDEN & ANDRÉ.

CHEQUERED TILLANDSIA.

NAT. ORD. BROMELIACEAE.

ETYMOLOGY: named after Tillands a physician at Abo, in Finland.

GENERIC CHARACTER: vide Lindley, *Botanical Register* sub. tab. 10. 1843 (Vriesia) et Endlicher *Genera Plantarum* 1306.

SPECIFIC CHARACTER: *folia* in cyathum regularem conferta, brevia, robusta plana vel subcanaliculata, ad basin late amplexantia, apice mucronata decurvata, nitida, integerrima, atroviridia in pagina superiore lineis quadratis vel tessellatis in zonas transversales superne pallidioribus inferne rubroviolaceis subepidermide conspicuis depicta, *flores*.... Brasilia meridionalis. — 1872.

Vriesea tessellata, Linden et André (*loc. praes.*).

Tillandsia tessellata, Linden Catal. — *Illustr.*, *hort.*, 1873, p. 78.

This charming species, already known and favourably received at the Exhibitions where M. Linden has sent it, has not yet flowered with us. When we announced it in the *Illustration Horticole* last year, we expected that it would soon throw up flower-spikes; but we have waited all this time in vain.

This species is a native of the province of St. Catherine, Brasil. It is easily distinguished at the first glance by the tranverse purple, chequered zones on the short mucronate leaves. They are pale above and purple on the lower surface. The regular, vase-like disposition of the leaves of the adult plant before flowering, its moderate size, and easy culture in a temperate house, combine to render this handsome plant one of the best of recent introductions.

E. A.

THE PARK AND PLEASURE GROUNDS.

THE ARAUCARIAS AT BICTON.

Araucaria imbricata has already attained such a development in Great Britain as to entitle it to be considered as fully naturalized. It fruits regularly and produces fertile seeds, which is held to be proof of naturalization. The *Gardeners' Chronicle* and other English horticultural journals have frequently called atttention to the fine specimens at Dunse-Castle, Berwickshire, and Castle Wigg, Wigtonshire. We have very much admired those at Eaton Hall, the residence of the Marquis of Westminster, and especially those at Dropmore, as well as in other places. We have also stated before that the handsomest specimen existing in Europe is at M. De Kersauson's, near Quimper in Brittany, where it fruits every year.

But the following details by M. Begbie, in the *Gardeners' Chronicle*, respecting the Araucarias at Bicton, where there is a fine avenue of this noble tree, may interest some of our readers: The conception of an Araucaria avenue appears to have originated about forty years ago. Since then several avenues of the same kind of tree have been planted in other parts of England, and may have attained greater heights. Those at Bicton, however, have exceeded all others in fertility. In the Autumn of 1872, from 8 to 10 bushels of good seed was gathered from 16 trees which showed their cones in 1871. One tree proved to be monœcious [1] and produced thirty catkins and twenty-five cones. Seeds from these cones sown in the spring of 1873 gave birth to over 100 healthy plants. The seed from the diœcious trees gave about 2000 seedlings last year.

Araucarias are making real progress in several parts of the United Kingdom. The largest in Ireland is in Woodstock Park, Kilkenny; it measured upwards of 40 feet in height more than ten years since. There is also a large number of fine specimens at Castle Martyr, Cork, one of which has likewise turned out to be monœcious.

They commenced cone bearing in 1867. We are not aware whether fertile seeds have been matured in Ireland. Where there are males, even at a considerable distance, the females are impregnated without further trouble, as was the case at Bicton. The pollen may often be seen floating in the air, and sometimes in such quantity as to be seen at a distance.

This handsome tree should be planted more freely, as it is unique in its ornamental effects in temperate countries; and when tastefully associated with groups of cedars, pines, etc., a landscape is greatly heightened in beauty.

E. A.

(1) We may here mention that the Araucarias are often monœcious, although most authors have regarded them as diœcious, or rarely producing both sexes on the same tree. *A. excelsa* has furnished numerous instances of this in Algeria and elsewhere. As soon as the number of adult trees increases, we shall doubtless have further proofs of it. One of the first plants of *A. imbricata* introduced into England may be seen in Kew Gardens, dating back to 1796. It is a female plant, but it is not a handsome specimen. It fruited for the first time in 1836, and the same season male cones were produced at Boyton. (*Editors.*)

THE VILLA VIGIER, AT NICE.

After passing the Quai des Ponchettes and the old port of Nice, on the road to Villa Franca, we enter a charming bay, bathed by the blue waters of the Mediterranean. — At the extremity of this bay lies the beautiful Villa Vigier, which few strangers, and especially lovers of plants, fail to visit when passing through " Nice the Beautiful. „

The courtesy of the proprietor was well known to us, and we looked over these lovely grounds again with all the more pleasure from having seen the commencement of the works, a dozen years ago, when Viscomte Vigier was planting his gardens and building his house.

Our object to-day is not to describe in detail all the plants we saw in this delicious spot, but rather to engage the attention of our readers for a short time while we point out some of the more noteworthy results obtained in this happy clime of perpetual Spring.

Our admiration was great on first beholding the luxuriant vegetation which has transformed what was formerly an arid, sterile spot into a smiling oasis of verdure, where we are delighted with a succession of agreeable surprises.

Rhododendrons and their allies, generally make but a sorry appearance in the gardens of the South, where every care, efficient shelter, and peat earth, obtained at a great cost, are necessary to ensure anything approaching a satisfactory result. Nevertheless, we saw some prodigious examples of different varieties of *Rhododendron arboreum* at Villa Vigier, which most certainly belong to the earliest introductions from Nepal and the Himalayas into Europe. These grand plants were laden with hundreds of their large clusters of rich scarlet flowers, just in the height of their glory; and handsomer specimens we do not remember ever seeing.

Azaleas and Camellias flourish equally as well. Immense plants of the latter were brought hither from Pallanza (Lago Maggiore) at a great expense, and they have grown most vigorously, producing every spring a profuse crop of flowers.

Palms may be said to constitute the main attraction of Viscomte Vigier's garden. Here may be seen noble specimens that would draw praises from the least enthusiastic of amateurs, and abundantly testify to what may be effected by those who try Palm growing in the Mediterranean region.

Ab jove principium. The Prince of Palms, under such conditions, according our idea, is the *Phœnix reclinata.* It is represented at Villa Vigier by three superb specimens. To give their size, is an easier task than to describe their beauty. The largest, planted out ten years ago, is a female plant. Its trunk, at the base where the old leaves have been cut away, is four and a half feet in diameter, or more than thirteen feet in girth. We made careful measurements, and can vouch for the accuracy of the figures given. The spread of its foliage is nearly thirty feet, and when the stem shall have lengthened out, bearing its plumed crown aloft, like the common Date Palm, it will form one of the most elegant and ornamental of its tribe. Last year, this plant bore 10,000 seeds, the greater number of which germinated. This year the produce is estimated at 20,000, resulting from artificial fertilisation with the pollen of *P. teunis, reclinata* and *pumila.*

There are two other somewhat smaller plants of the same species of *Phœnix* in the garden, one male and the other female, the latter annually giving issue to a numerous progeny. What struck us most in these majestic trees was the dense habit their spreading foliage has assumed under the influence of the Mediterranean sun, resembling more that of *Jubœa spectabilis.* Indeed, one no more recognised the *Phœnix reclinata* of our winter gardens. Its elegant airy foliage and padded, or rather webbed, stem give it a highly ornamental aspect. Possibly it will retain the closer, denser habit of the young state, and the numerous divisions of its enormous pinnate leaves may lengthen yet more with age. In any case, it is an extremely valuable acquisition for the Mediterranean climate, and in this respect very different from many other Palms which have by no means turned out so well as they promised.

Before leaving this group, we may mention a plant of *P. pumila*, five years old and a yard in diameter, with a spread of foliage nearly twenty-five feet. We strongly suspect this to be nothing more than a young plant of the preceding, *P. reclinata.*

Phoenix leonensis forms extremely handsome tufts here of the female plant; but it did not mature its seed. The head gardener, M. Cornélis, conceived the happy idea of fertilising it with the pollen of *P. reclinata*, and the result was fertile fruit, but with this peculiarity that it was double the size of the normal fruit of *P. leonensis* and almost exactly like that of *P. reclinata.* And what is still more satisfactory, the young plants issuing from this cross shew a much hardier constitution than those of natural descent.

One of the most beautiful plants in the garden is another *Phoenix* which we found labeled *humilis.* It forms a tuft with numerous leaves of a bright hue, curved downwards to the ground in the most graceful manner imaginable, giving it quite a distinct habit. At first, we thought it must be *Fulchironia senegalensis*, but on closer examination it appeared different.

This beautiful plant annually produces fruit borne on spadices of a splendid golden yellow, almost concealed amongst the foliage. The fruit is about the size and shape of a small olive, of a brilliant carmine tinged with orange, and occurs in thousands, but hitherto no trace of an embryo has been found in the seeds.

We called M. Cornéli's notice to the fact, that M. Durieu, of Bordeaux, had obtained ovoid instead of reniform seeds by fertilising a *Chamaerops* with a *Phoenix;* and we requested him to reverse the operation by conveying pollen of a *Chamaerops*, or even another *Phoenix*, to his plant when the flowers are ready to receive it. This specimen is so handsome in its regular symmatrical outline that the Viscomte calls it his " Vegetable Firework „.

The *Chamaerops* group is no less remarkable at Villa Vigier. It is composed of a considerable number of species and varieties, the nomenclature of which, however, is open to criticism. We frankly confess at once, that we agree with those who believe that *Chamaerops* is represented by a solitary species only in China and Japan, with the exception, perhaps of an extraordinary form of which we shall speak

again presently. We think, and this is the opinion of many botanists, that *C. excelsa, Fortunei* and *sinensis* are merely forms of a single species. We have recently had abundant confirmation of this in the numerous fruiting specimens which have come under our observation, and which have gradually lost the distinctions of the young state, and now bear fruit almost exactly alike.

A very handsome example, named *Fortunei*, and upwards of twelve feet in height, crowned with a magnificent head of foliage is the object this season of a very unusual phenomenon, the entire change of sex. Last year and in preceding years, it bore only female flowers, which matured their seed and from which numerous healthy plants were raised. This season, this very same tree is bearing, at the present moment, 15 splendid male panicles covered with thousands of flowers, amongst which we have not been able to discover *a single female*, and that after repeated searchings.

To make certain that there was no misunderstanding or mistake on either side, we questioned both M. Cornélis and the Viscomte, who repeated their statement; and we have their combined evidence that there has been an absolute change of the sexes in one year.

Ch. argentea is just beginning to shew the beauty of its silvery glistening foliage. *Ch. hystrix*, which owes its specific name to the presence of numerous long slender prickles at the base of the leaves, giving it a porcupine like appearance, exhibits the remarkable peculiarity that each separate thorn or spine is free and easily detached from the fulvous sheath in which it is inserted. Unfortunately, its habit leaves much to be desired, and it is doubtful whether it will ever develop the elegance of the other species. *Ch. tomentosa* is represented by a strong plant, which likewise begins to exhibit the marked polymorphous characteristics of its petioles, especially at their junction with the blade.

Ch. duplicifolia, of which we saw a strong specimen obtained from Belgium, is doubtless the singular form of *Ch. humilis*, in which the pinnules are doubled, that we observed for the first time at one of the International Exhibitions of Europe, at Amsterdam, we believe. This plant is more curious than beautiful, and is not always constant in respect of this peculiar duplification of the pinnules. A still more strange appearance is presented by a form named *Ch. elegans glauca*, which, in addition to an elegant habit and the pretty marine green tint of its foliage, displays a very remarkable arrangement of the pinnules, the lower ones to the right of each fan shaped leaf being turned upwards forming au acute angle with the other part of the leaf, in consequence of an imperfect development of the central node from which they radiate at their junction with the petiole. We never saw this extraordinary character developed to the same extent before. Another fine *excelsa*, called *vera*, 23 feet high, and a few other scarcely distinguishable varieties, not worth particularising on that account, complete our hasty notes on this genus at Villa Vigier, with the exception, however, of the most peculiar of all.

This last and most extraordinary plant is of Japanese origin, it is said, and was received under the name of *Chamaerops Bino*. It differs in every respect from. *Ch. excelsa*. In habit it is compact, and its fan-shaped, erect leaves are as hard as zinc, and of a beautiful glaucous green. The with leaves and form a miniature forest of the most curious aspect.

As a pendant to this plantation, we have a group of umbrageous Bamboos, whose lofty leafy reeds overhang a small pond filled with Water Lilies, Sedges and the curious *Aponogeton distachyus*.

Bambusa mitis, spinosa, nigra and *aurea* here intermingle, forming a dense, almost impenetrable thicket. *B. mitis* speedily takes possession of the ground, and it is the handsomest and most vigorous of all. We measured some of its annual stems, which were over thirty-two feet high, and nearly fourteen inches in circumference. Stout stakes are made from their stems, and the slenderer canes of *B. nigra*, serve a similar purpose where less strength and substance are required. *Arundinaria falcata*, although growing vigorously, does not form regular large, green clumps, as at Cherbourg, for instance, in the garden of M. Herpin of Frémont.

Bambusa variegata, on the other hand, develops its beautiful striped foliage in rich luxuriance. Again, it will not do to depend upon *B. Thouarsii* and *B. arundinacea*, which may start strongly, but are liable to be cut to the ground by late frosts. *B. scriptoria*, so graceful and distinct in its branching shrubby habit, throws up strong shoots, but is apt to become discoloured in the sun. Taken all in all, *B. mitis* exceeds, here, all its congeners in vigour, beauty and hardiness.

Cyperus alternifolius, plunged in the midst of the water of the basin, does as well as could be wished, not even losing its annual stem. It is otherwise with *C. Papyrus*, whose slender shaft terminating in feathery heads are cut petioles are armed with curious large, curved, formidable looking spines, thinly scattered throughout their whole length, and very much resembling those of *Agave grandidentata*. Another peculiarity lies in the fruit, which contains a large quantity of dark reddish brown pulp. It ripens in October and is capital good eating, possessing the flavour of the Fig. Numerous fruits are ripening on this plant this year, fertilised by pollen from *Ch. gracilis*.

Several other Palms may be seen at Villa Vigier, as: *Brahea dulcis*, very much battered by the sea breeze and injured by the late spring frosts — a plant we should only recommend for sheltered places. *Seaforthia elegans*, a beautiful specimen, which is open to the same objections; it is planted near the house where it is too much exposed to the influence of the winds; *Corypha australis*, a fine vigorous species, which we observed with regret was cut by frost at the points of the young leaves in places, from Hyères to Genoa, but which nevertheless is beginning to form some fine specimens. The plateau upon which the Villa is built being destitute of large trees, the proprietor recently purchased a number of large Date Palms at Bordighera, on the Italian coast, and transported them at a great cost to his garden, many of them weighing upwards of two tons each. These trees have succeeded admirably, and are flourishing, the soil having been prepared for them to a great depth. The greater part of them are from 45 to 50 feet in height. To form an undergrowth in this Palm grove, a large number of plants of *Cordyline indivisa* have been introduced, and their vigorous growth is something astonishing. They are clothed to the very ground

off, and it throws up afresh every year. A curious thing connected with this is, that the rhizome freezes in the water, whilst the creeping portions on the ground around the basin suffer no inconvenience from the low temperature. In *C. alternifolius* the action is reversed.

We spoke, just now, of a forest of *Cordyline indivisa.* We may here appropriately mention the magnificent single specimens of this species and its varieties, such as *C. lineata Veitchii* and *calocoma*. Here is the most splendid *C. lineata* we ever saw, which every season bears a profusion of its ample panicles of flowers and ripens its seed. Last year it brought no fewer than 80,000 to maturity. The plant in question is divided nearly to the base in four large branches, the whole forming a compact clump upwards of fifteen feet high.

Another splendid specimen, this time of the Araliaceous family, rises from behind the main building. It is the *Oreopanax dactylifolia*, introduced from Mexico by M. Linden. Here it becomes a veritable tree with a trunk, which was at first bark bound, but after being gashed longitudinally, it recovered and now supports a large dense head covered with handsome palmate leaves. We thought at first it was a variety, differing from the type in the broader lobes and shallower sinuses of its leaves; but this is probably due to cultivation.

All the variegated varieties of *Phormium* are here: *Ph. tenax, Colensoi, purpurea*, etc. But the large leaved variety of *tenax*, the handsomest and most vigorous of the variegated set, forms an unrivalled specimen, bearing more than 600 leaves, and just now putting forth seven flower spikes, which, we are informed, grow to a height of 15-17 feet. This plant has already furnished seed, which reproduced the type, a few only exhibiting variegation. Probably these seedlings will become partially variegated with age.

The Araucarias here include three or four species, which grow well or indifferently, according to the amount of shelter given them. *A. Brasiliensis* and *gracilis* are frequently damaged by the sea-water and gales of wind. A little known remedy is employed at the Villa for restoring sickly trees, suffering from undue moisture at the roots. It consists in planting a circle of some gross feeding plant around the base of their trunks, which serve to pump up the superfluous water and drain the roots. Treated in this manner, Araucarias have regained their verdure in one year, or two, at the most. The most valuable plant for this purpose is *Salvia gesneriaefolia*, an extremely common species in this region.

The Australian group of Acacias have found a second home in the Mediterranean countries. Wholly exposed or under the shelter of large *Eucalyptus globulus*, which is planted everywhere here, these elegant trees attain a large size, forming large clumps, covered with yellow flowers in early spring. The following are considered as the best for this part of the country: *Acacia longissima, grandis, biophylla* and varieties, *linifolia* and varieties, *suaveolens, trinervis, cultriformis, Hugeli* and *verticillata*, inasmuch as they will withstand the winds, poor soils and grow in unfavourable situations.

It is pretty well known what a large size the Agaves attain in the South. Intermixed with the Cordylines mentioned above, there is a fine collection of these plants at Villa Vigier. The most beautiful and the strongest are; *Agave dealbata, Solmiana, univittata, robusta, picta, filifera major, applanata, ferox* (an enormous specimen), etc.

Examples of *Grevillea robusta*, thirty feet; clumps of *Mahonia Nepalensis*, ten feet; *Dammara Brownii*, twelve feet; *Yucca canaliculata*, ten feet; *Y. draconis*, twelve feet; *Dasylirion gracile*, splendid, six feet in diameter; numerous gigantic specimens of *Rhododendron arboreum*, from Lago Maggiore, covered with immense clusters of brilliant flowers; an enormous clump of *Metrosideros candelabrum, Grevillea flexuosa, Myoporum pictum*, and all the long list of flowering shrubs and trees comparatively unknown farther North furnished us with material for many hours of pleasure and instruction.

The walls were covered with Banksian Roses, *Bignonia capreolata, Tacsonia ignea* and *Van-Volxemi, Plumbago scandens, Buddlea Madagascariensis, Pelargonium capitatum, Bougainvillea spectabilis* and *splendens*, various Roses and all sorts of charming climbers, covering their supports with a tapestry of flowers.

There is a blank side to every picture. Here we must seek no green turf during the summer, for no amount of watering will preserve its verdure. After numerous trials, a method has been discovered by which green lawns may be had in Winter, the only season when this mild climate is enjoyable. By the beginning of the month of June when the residents leave, they are nothing but scorched and dried up hillocks and tufts. They are left in this state till September, and then sown with hardy grasses, which remain short and green during the Winter, and form a beautiful turf.

If the foregoing description should induce any of our readers to form an establishment in the South where they could spend the Winter season, the taste for which is now beginning to spread, they will find many other gardens after the same style as that of Villa Vigier, offering many and varied attractions for the plant lover. For example, the gardens of M. Thuret, at Antibes, of M. Mazel, Gulf of Genoa and of M. Denis, Hyères. Elegant residences are springing up in all directions in this delightful country, where an easy, healthy existence is insured by a mild climate and cloudless sky. Here are numerous places where land is to be had, and everything combines to attract the inhabitants of the north to this region of continuons spring.

E. A.

HORTICULTURAL CHRONICLE.

September, 1874.

— Protection of Vines from Frost. — Mr. C. Baltet has recently described a new method of preventing vines from freezing, devised by Mr. Rousseau, of Estissac, Aube. The procedure is no other than burying the canes after pruning throughout their whole length, with the exception of the two uppermost buds, and leaving them so until the frosts are over. This may be very well and interesting as an experiment, but we have serious doubts whether remaining so long under ground would not cause the swollen sappy buds to perish; and would the young shoots thus kept back carry their fruit satisfactorily? It is only by trying it on a large scale that this question can be answered, a garden experiment is insufficient.

We must admit that we prefer the following idea, communicated to us by the celebrated pomologist, Mr. Mas. It consists in making a vertical hole at the foot of each vine with an iron bar, enlarging it by working the bar about and coiling the whole cane within it. In this position the circulation of the air around the buds is ensured, and the warmth of the soil is sufficient to preserve them from frost. The young shoots may even start a little before the canes are withdrawn, but they will quickly acquire the proper direction after being taken out.

— Extraordinary bunches of Grapes. — At the grand Flower and Fruit show held at Belfast in connection with the meeting of the British Association, the largest bunch of grapes ever recorded as having been grown in the United Kingdom was exhibited by Mr. Hunter, gardener to the Earl of Durham, at Lambton Castle. This monster bunch weighed no less than twenty-one pounds twelve ounces! It was of the Black Hamburgh or Frankenthal variety. Nothing approaching the weight in black grapes was ever previously shown. Last year Mr. Hunter exhibited two very large bunches of the same variety at Manchester, one weighing nine pounds eight ounces, and the other thirteen pounds two ounces.

— Insect-destroyers of Cucurbitaceae. — Two insects have devastated the Pumpkin and Vegetable Marrow culture this season in the United States, from Albany to New-York. One is a *Galeruca*, the specific name of which could not be determined by Mr. Boisduval, who has examined the insect. This insect devours the young plantlet immediately after germination; but if they are so fortunate as to escape the first enemy another equally insatiable awaits them in the form of the *Epinachna borealis*, closely allied to the species which attacks the native Red Bryony. No means of destroying these scourges have as yet been discovered.

— Ravages of Tenthredos. — It is not so with the insect popularly known as the Pear-tree leech, *Tenthredo œthiops*, which has effected such havoc in many French nurseries this year, both in Paris and its neighbourhood and also in Touraine. We ourselves have seen the destruction it has caused amongst the pear trees in Mr. Defain's nursery, at Amboise. It may be observed in the larva state, when it resembles a small leech. It is black at first, eventually red, and feeds upon the cellular tissue of the leaves before it becomes transformed into a hymenopterous four-winged insect.

It is easily destroyed by sprinkling the leaves with slaked pulverised lime.

— Important Exhibitions in England in 1875. — The Royal Botanic Society of London has already issued a programme of arrangements for the Flower and Fruit shows to be held in Regent's Park Botanic Gardens in 1875. It runs as follows: Exhibitions of Spring Flowers, Wednesdays, March 31, and April 25; Summer Exhibitions of Plants, Wednesdays, May 26, and June 16; Exhibition of Fruit and Cut Flowers, Wednesday June 30; Evening Fête, Wednesday, July 14. — The Preston Floral Society offers some very liberal prizes to amateurs for twelve Stove and Greenhouse Plants to be grown on from 6-inch pots similar to the "Davis Competition" of the Royal Horticultural Society. The competition to take place in August, 1876, and all entries to be effected before November 30, 1874. First Prize £ 25, and Gold Medal, value £ 17-17 s.; second, £ 15, and Silver Medal; third, £ 10 and Bronze Medal; fourth £ 5.

— Mr Lichtenstein and the Phylloxera. — Whilst experiments are still being tried for the destruction of this formidable insect, and the Academy of Sciences is overwhelmed with communications relating to the subject from investigators who, impelled onwards by the dazzling bait of a reward of £ 12,000, are vainly puzzling their brains to find the remedy desired, Mr. Lichtenstein has made a new discovery. In a thicket of Evergreen Oak *Quercus Ilex*, he found myriads of Phylloxera in copulation, a circumstance not previously observed. He wastes no time in making known his good fortune through the medium of the agricultural and viticultural organs, declaring that nothing would be easier than to destroy this terrible beetle by taking advantage of these social meetings designed by nature to ensure their multiplication. But a learned fellow-investigator, Mr Balbiani, discovers in his turn that the insect seen by Mr. Lichtenstein is not the *Phylloxera vastatrix*, but a new species of the same genus, which he names after its discoverer.

— A remarkable beech tree. — In a recent number of our contemporary, the *Gardeners' Chronicle*, there is an illustration of a magnificent large Beech tree, growing in the grounds of the Marquis of Lothian, at Newbattle Abbey, near Edinburgh. It is believed to be one of the finest in Europe, and is indeed a remarkably noble specimen. Its height is 100 feet, and the circumference of its branches is 120 yards. The circumference of its massive bole at a foot from the ground is 33 feet, and at eight feet from the ground it measures 27 feet. The lower branches arch over until they reach the ground, when many of them assume an upright growth. Its principal limbs are straight and clean growths of immense proportions. The exact age of this grand tree is unknown.

— Congress of Rose Growers. — This body held its session at Lyons this season, in the midst of that country of beautiful roses and celebrated raisers. The names of Guillot, Lacharme, Schwartz, Ducher and others, are famous amongst rose growers. We experienced great pleasure in our intercourse with the members of this society, and though we did not assist in their labours, we could talk of the grand triumphs already achieved, and speculate on the future. Under the presidency of Mr Leon de St Jean, a young amateur full of zeal for the good cause of Horticulture, these gentlemen examined the new seedlings of this season, and continued their valuable labours. We wish every success to this meritorious and growing association.

— Seeding of Wellingtonia. — The first seeds of this tree ripened in Europe have germinated this year with a Mr Thil, in the neighbourhood of Epernon. They were self-fertilised, and were allowed to fall around the tree where they sprang up unassisted. The leaves in the young plants were verticillate and not alternate as in the adult.

— Grasses for turf in the shade. — The formation of turf or a carpeting under the shade of trees is a point demanding the most careful forethought on the part of designers and planters of ornamental gardens. In the south of Europe, *Convallaria japonica* is available; and elsewhere *Hypericum calycinum* and *Poa nemoralis* are recommended. We ourselves have suggested *Carex divulsa*, but this plant cannot be procured in the trade.

In an article in the *Gartenflora* Mr. Jæger gives the results of his trials in this direction. *Poa nemoralis,* he says, grows in unequal tufts, and the leaves of *Brachypodium sylvaticum* are too scanty, and it does not flourish except in a moist soil. Therefore he proposes, amongst the fine-leaved grasses: *Aira flexuosa, Festuca ovina, glauca, duriuscula* and *rubra*, especially the two last, because they succeed well even in Pine woods. Amongst grasses with broader foliage, *Melica nutans*, *Arrhenatherum elatius* and *Poa sudetica* succeed tolerably well, particularly if a little of *Luzula albida* is added.

These suggestions are very well so far, but one cannot easily purchase many of the plants mentioned, hence the advice however good will remain unavailable.

— Disease of Orange trees in Algeria. — A real plague is now devastating the Orange trees of Blidah, Algeria. In addition to the Kermes and a large hymenopterous insect the growers have hitherto had to contend against, a disease has within the last two years been rapidly invading the plantations. It attacks the roots and causes them to perish in a fortnight. They change black and become rotten and peel, and all around the soil decomposes. Two kinds of vermin have been found on the diseased roots, a myriapod and an undetermined black insect. The only remedy hitherto employed with any degree of success is laying the roots bare and applying from twenty to thirty pounds of dust coal or powdered charcoal to each tree.

— Chrysanthemums of the Temple Gardens. — These attractive Autumn flowers have long formed an established institution of the Temple Gardens in London, and this season the display is again very fine. The weather has been eminently favourable for the development of Chrysanthemums out-of-doors this Autumn and in many places they are very good. A few pages forward we give a brief summary of the Royal Horticultural Society's Chrysanthemum and Fruit Show.

E. A. & W. B. H.

CANNA MADAME CHRÉTIEN.

A plant of medium size and upright habit, like the hybrid of *C. glauca;* leaves broad erect, acutely acuminate, glaucescent green; panicles large, supported on triquetrous, winged, green peduncles; flowers bright orange yellow; petals clawed, large, emarginate at the top with a long mucro in the sinus, furnishing a striking character of this variety.

A very free flowering plant, raised from seed by Mr Crozy, nurseryman at Lyons, and destined to occupy a prominent place amongst the ornamental plants of this genus for summer bedding or forcing.

J. Nœtzli.

ALOCASIA HYBRIDA GAULAINII.

Numerous hybrid or cross varieties, the issue of *Alocasia metallica* and *Lowii* are already known. *A. Veitchii* still ranks among the best, unless the numerous seedlings we saw growing at Messrs. Veitch's under the care of Mr Seden have since produced something more striking.

But none of the varieties we have seen approach in vigour and nobleness of aspect that raised from seed by Mr Gaulain, foreman of the houses at la Tête d'Or, Lyons, and bearing his name. At the present there is only one plant of it in existence, which, moreover, was rather badly injured by the dreadful hail-storm that broke over Lyons in June last, and shattered glass to the value of £ 560 in the municipal gardens. Let us hope that this beautiful plant, of which we give a description below, may yet survive to be propagated and dispersed as it deserves.

A very vigorous, semi-caulescent plant, dark olive green in the upper part of the stem, as well as the stout petioles, which support a heart-shaped peltate mucronate blade with a deep basilar sinus; upper surface of the leaf of a deep green with the prominent nerves and veins bounded by silvery bands, lower surface deep bright violet, with equally prominent, nearly black nerves. Growth excellent, habit elegant, and altogether a fine acquisition.

E. A.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

PL. CLXXX.

MASDEVALLIA TROCHILUS, LINDEN & ANDRÉ.

NAT. ORD. ORCHIDEAE.

ETYMOLOGY : This genus was dedicated by Ruiz and Pavon, authors of the *Flora Peruviana*, to Dr José de Masdevalle, physician to the King of Spain and an enlightened promoter of botany.

GENERIC CHARACTER : *Calycis* foliola (*sepala*) patula, exteriora usque ad medium connata, *labellum* unguiculatum ecalcaratum, ungue foliolis exterioribus adnatum; *gynostemium* apterum; *anthera* terminalis operculata; *pollinis massae* duae, cereaceae. *Plantae* parasiticae, acaules. Scapi uniflori. (Ruiz et Pavon, *Flora Peruviana.*)

SPECIFIC CHARACTER : *Vaginae* basilares scariosae scissae, *folia Masdevalliae Lindeni* subsimilia, crassa, lineari-obovata, 20 cent. longa, 4 cent. lata, obtusa, apice emarginata mucronata decurva, trinervia, in petiolum canaliculatum attenuata, *bracteae* 2 breves amplexantes truncato-acutae; *scapus* erectus, 0,30-0,40 longus, teres, *pedunculus* elongatus uniflorus; *perianthii tubus* brevis; *sepala* 2 inferiora conjugata postice sacciformia brunneo-violacea punctata in caudicula filiformi 4-5 cent. longa lutea abrupte attenuata, superius erectus 6-7 cent. longus luteus lineari-acutus, *petala gynostemiumque* haud vidi... Nova-Granata, Roezl, 1872. E. A.

Masdevallia trochilus, Lind. et And. in Lind. Catal. 1873, et *Garden. Chron.* 1873, p. 711.

This curious species was sent to Mr. Linden from New-Grenada in 1872 by Mr Roezl, who forwarded living plants of it collected in the elevated regions of the Cordillera of the Andes. According to this traveller the gigantic flowers of this peculiar species are shot with a blueish metallic lustre like the plumage of some of the humming-bird tribe, hence the specific name. This colouring has procured it the appellation of *Colibri* from the inhabitants of the southern part of the State of Antioquia, a word having the same signification.

Naturally, Mr. Linden awaited its flowering with great impatience. At length this pardonable curiosity was gratified, and if we had not the azure flowers announced with so much noise, we were nevertheless feasted with one of the most singular species of this genus, so rich in extraordinary flowers. We saw the plant in bud, and partially described it : but when the artist painted the expanded flowers they quickly withered and we were obliged to complete our description from the water-colour painting of Mr. Pannemaeker. We must finish our account of it the next time it flowers.

This species is still very rare; Mr. Linden possessing a few specimens only, which very fortunately are in perfect health.

E. A.

CASUARINA SUMATRANA.

This beautiful tree was named and described by Junghuhn (*Tijds. voor natuur. gesch.* XI, 113), and afterwards published by De Vriese and Miquel. It is a native of Sumatra, where the aborigines call it *Andar Mangan*. It has a vast, almost spherical, shady crown, and rounded, jointed branches, with very slender, deeply furrowed, sharply four-angled branchlets. The ribbed sheathes of the branchlets are four-toothed at the summit, with scarious scale-like teeth. The fruits are borne at the extremities of the branchlets, and the scales of the strobile or cone are furnished with a recurved beak.

This is an exceedingly elegant plant for the conservatory, and it bears fruit while still quite young, as we have recently seen in the specimen exhibited by Mr. Comte at Lyons. It is usually kept in a stove. If we had more complete information respecting its exact habitat in Sumatra, whether at a great altitude or not, we should be able to judge whether its would succeed in a simple greenhouse.

J. Viator.

HORTICULTURAL EXHIBITIONS AT LYONS.

It will interest our English readers to become acquainted with the principal novelties shown at Lyons, especially in the way of new roses. Mr Guillot junior staged two new varieties :

Marie Guillot, a splendid white Tea Rose, slightly tinged with yellow, of fine shape and good habit.

Aline Sisley, Tea, deep rose, of a deeper hue in the centre and brighter towards the margin of the petals, unique in colour amongst Teas (Mr Sisley's description).

Mr Hoste, of Vaise-Lyon, presented some excellent seedling Dahlias, amongst them :

Ma petite fille, large white flower, tipped with lilac.

Béatrix, yellow bordered with scarlet.

A. Monti, yellow bordered with scarlet.

Polly Perkins, chamois colour tipped with white and pink.

William Pringle Laird, splendid lilac.

François Wiot, very dark red.

Augustine Rougier, lilac-pink and white.

Mr Boucharlat exhibited some fine new *Zonale Pelargoniums*. Mr Comte had a magnificent lot of stove and greenhouse plants including a large number of Mr Linden's introductions. We greatly admired a specimen of *Casuarina sumatrana* in fruit, and the tuberous-rooted Begonias of Mr Gaulain, note son which will be found a few pages back.

Among seedling roses exhibited by Mr Schwartz deserving of notice we may mention that labelled N° 2, a beautiful delicate pink variety of satiny texture, raised from *Victor Verdier*. It is a variety of good habit, and will be sent out in 1875.

The largest and finest Hybrid Perpetual Roses in Mr. Schwartz's collection of 190 varieties, which took the first prize, were : *André Dunand*, bright pink, *Madame Georges Schwartz*, *Président Thiers*, *Marie Van Houtte*, *Baronne Rothschild*, *Xavier Olibo*, *Maréchal Niel*, *Paul Neyron*, etc.

E. A.

PL. CLXXXI.

DRACAENA (CORDYLINE) CASANOVAE, LINDEN & ANDRÉ.

NAT. ORD. ASPARAGACEAE.

For the ETYMOLOGY : See *Illustr. hort.*, pl. CLXIII.

ETYMOLOGY and GENERIC CHARACTER : Voir *Illustr. hort.*, 1860, t. VII, pl. 264.

SPECIFIC CHARACTER : robusta; *folia* congesta petiolo stricto 10 cent. longo, basi nigro-purpurascente striato, marginibus convolutis scarlatinis, lamina utrinque acuminata brevi elliptica breviter mucronata viridi olivacea subepidermide violascente, marginibus roseo-scarlatinis praesertim ad basim laminae. — In insulis Nov. Hebr. Oceani australis, 1872. E. A.

Dracaena (*Cordyline*) **Casanovae**, Linden et André, *sp. nov.*

We saw this handsome plant for the first time at Florence in the month of June of the present year. It was included in the collection of Dracaenas with which Mr. Linden gained the first prize in an exceedingly keen competition.

This species is dedicated to the Marquis della Valle di Casanova, one of the most distinguished of Italian amateurs, and a member of the jury at the International Exhibition of Florence.

The plant is of compact habit with the leaves clustered at the top of the stem. Leaves purple-brown at the base and striped, rolled back and fiery red at the margin, about four inches long and borne upon stout petioles. The short, elliptical blade is suddenly narrowed at both ends, shortly mucronate, of a uniform olive green, suffused with violet beneath the cuticle and bordered with scarlet, especially towards its base. This species has not yet developed its full beauty, the plants introduced from the New-Hebrides being still in a young state. As they become older they will doubtless produce larger and more brilliantly coloured foliage.

Dracaenas are rapidly gaining in favour, and deservedly so. In fact, no other class of plants can dispute their pre-eminence from an ornamental point of view, and in regard to easy culture. They are peculiarly adapted for in-door embellishment, not being so impatient of changes of temperature and other unfavorable conditions. In the brightness of the colouring of their foliage, again, they are surpassed by very few things. What a magnificent variety the various forms present! and what a grand scale of contrasts we have, beginning with the old *D. ferrea* and *terminalis* and finishing with the splendid recent introductions from the Pacific Islands, *D. gloriosa* and *Reali!*

Their success is by no means on the wane, and *D. Casanovae* will take a place in the first rank of ornamental plants.

E. A.

SEVENTEENTH SESSION OF THE FRENCH POMOLOGICAL CONGRESS.

The meeting of this body took place at Angers this year. The sittings were held under the presidency of Mr Mas, the learned editor of the *Verger*, and lasted from Sept. 28, till Oct. 3. A large number of French and foreign pomologists took part in the proceedings. Among other celebrities, we had the pleasure of meeting Messrs. de Mortillet, Baltet, Willermoz, O. Thomas, Luizet, Pynaert and Burvenich of Ghent, and numerous other distinguished persons. The assemblage was a very hearty one, and we have much pleasure in believing that its labours will be valuable to pomological science.

An exhibition specially devoted to fruits was organised by the Horticultural Society of Angers during the stay of the pomologists. The municipal authorities assisted at the opening ceremony of the show, which was held in an elegant tent erected between the public garden and the Mall. We viewed the splendid collection of fruits, and noted the following awards: the finest lot of pears, comprising 175 well-named varieties, belonged to the Horticultural and Botanical Society of Limoges, and carried of the diploma of honour. Then came Mr Maurice Desportes, of Angers, for a collection of various fruits; Mr Guinoiseau, for a large collection of fine pears; Messrs. Gelineau and L. Leroy for superb grapes; Messrs. Baltet of Troyes for a collection of 31 rare pears, etc. Finally, the grand contributions presented by the Society. Altogether, if not remarkable for quantity, the exhibition was excellent in choice and quality; and the capital organisation and artistic arrangements were deserving of all praise.

Nevertheless, we may be permitted to add that the absurd and interminable names given to pears by Mr Sannier, a raiser of Rouen, drew something even more expressive than a smile from us. Read the names, Pear *Souvenir de la rue Mare-au-trou*, and Pear *Souvenir du vénérable abbé de la Salle*, and who would not laugh at the expense of the donor? Possibly some of the sallies may have reached the ears of Mr Sannier. We hope so, and also that he will profit by them in future.

Ed. A.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. mnx. in Horto Lind.

J. Linden, publ.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

L'ILLUSTRATION HORTICOLE.

J. Linden, publ.

PL. CLXXXIII.

CYPRIPEDIUM SCHLIMII, VAR. ALBIFLORUM, LINDEN.

NAT. ORD. ORCHIDEAE.

ETYMOLOGY : κύπρις, ἶδος, Cypris, a surname of Venus, and ποδίον a kind of shoe, in allusion to the shape of the labellum.

GENERIC CHARACTER : Perigonii patentis *foliola exteriora* lateralia uni v. plurinervia, labello subopposita, libera v. inter se connata, supremum conforme, quinquenerve ; *interiora* augustiora. *Labellum* maximum, inflatum, calceiforme. *Columna* brevis, cernua, apice trifida, lobis lateralibus subtus antheriferis, intermedio sterili, petaloideo-dilatato. *Antherae* loculis discretis, subbivalves. *Pollen* pulticeo granulosum. *Stigma* deltoideum, columnae faciem infra antheras occupans. — *Herbae in hemisphaerae borealis calidis temperatis et frigidiusculis obviae ; radicibus fibrosis*, *caulibus foliosis, floribus magnis*, *speciosis*. (Endlicher *Genera Plantarum*, 1618.)

SPECIFIC CHARACTER : Affinis *Cypripedio Lindleyano*, Schomb. ; *petala* ovato-obtusa ; *staminodium* ovato-panduratum apiculatum, stigmatis labium superius triangulum, inferius retusum lobatum. Nova-Granata (ex Reichb. *Xenia*, i, 125, tab. 44).

Cypripedium Schlimii, var *albiflorum*, Lind. in litt.

Selenepidium Schlimii, Reichb. f. *Bonplandia*, ii, 277 ; Pescatorea, 1855 ; *Flore des Serres*, XVIII, 153.

CHARACTER OF THE VARIETY. — Flowers white, including the labellum. This charming variety with very narrow deep green leaves and almost entirely white flowers comes from the western Cordillera of Colombia, whilst the typical variety has not been found beyond the river Magdalena. In addition to the attractions offered by this pretty plant in its abundant white flowers, its possesses the advantage of being easily cultivated, and will succeed in the cool house recommended for the Odontoglots from the same region.

This variety is exceedingly scarce, and only a very few specimens could be sent over.

E. A.

THE KITCHEN GARDEN AND ORCHARD.

MELONS.

Dr. Cenas of Meyzieux, Isère, cultivates a numerous collection of Melons. Thirty-eight of his best varieties were recently exhibited at Lyons. The judges had ample time to examine and taste them. The following sorts are those which appeared to us to be the most worthy of attention, either for their beauty or superior flavour.

D'Esclavonie, fruit large, rind white, flesh white, delicious.

Noir de l'Inde, resembling a water-melon, skin black, flesh red, perfect.

De Caprera, fruit large oblong, netted green and yellow, rind thin, quality excellent.

De Chypre, fruit medium, oblong, rind white, thin, first-rate quality.

De Skilman veiné, large, oblong, netted fruit, skin deep green, flesh red, excellent.

Moscatello panaché, fruit round, medium sized, netted, skin white dotted with black, rind thin ; a good and prolific variety.

To the foregoing varieties we may add the following selected from other collections at Lyons.

Cantaloup noir de Java, exceedingly large rugose fruit, of capital quality.

Orangine de l'Hérault, fruit spherical, with a smooth yellow skin ; excellent.

De Siam, fruit medium depressed, netted, golden yellow.

The preceding notes may be serviceable to lovers of choice melons. Seeds of the varieties enumerated may be had of Mr. L. Lille, seedsman, Lyons, who grows a large collection of Melons himself.

E. A.

NEW FRUITS.

PEAR ABBÉ PÉTEL.

Fruit large or very large, shape of the calebasse, six inches or more long, about three in diameter, curved upwards ; stalk stout, variable in length, often thick and fleshy ; skin bright citron yellow, dotted with gray, freely russetted at the top and slightly tinged with pink ; flesh melting, delicate, perfumed ; ripe in October or November.

This handsome fruit was raised from seed by Mr. Aunier, nurseryman, Lyons, and Mr. Liabaud will send it out from Nov. 1, 1874. Fine specimens of it were exhibited at the last exhibition of the Horticultural Association of Lyons.

P. ERCEAU.

FLORICULTURE.

NEW TUBEROUS BEGONIAS.

Since the introduction of the tuberous-rooted Begonias of Peru and Bolivia by way of England, raisers have had a fine harvest of new varieties or hybrids of the most astonishing diversity, varieties at once the delight of gardeners and the plague of botanists. Their parentage is so inextricably confused, that it is no longer possible to disentangle it. Already, horticulturally speaking, the tribe is exhausted. Everybody may sow and obtain handsome varieties. The only thing left to do is to sell amateurs the seed in mixtures, which will give all sorts of pretty things that will never be either named or described.

Nevertheless, the most striking varieties will still be selected and preserved. It is our intention now to enumerate a selection made by Mr. Gaulain, head-gardener of the in-door department of the municipal gardens of Tête d'Or, Lyons, from a vast number of seedlings, and to which he has given the following names :

1. *Jules Chrétien*, a much-branched plant, petioles red rather long, pedicels short, leaves undulated, toothed, fringed with pink hairs, floral bracts and ovaries deep red, corolla large consisting of four heart-shaped elongated petals, of a beautiful cerise vermilion, staminal column oblong, large.

2. *Madame Gaulain*, an almost stemless, medium sized plant, with shortly petiolate crenulate slightly ciliate leaves; peduncles erect, long, red towards the top; pedicels short; bracts orbicular, ciliate; flowers large, regular, consisting of 4 or 5 roundish salmon-pink petals; staminal column almost spherical.

3. *M. Chevrier*, a magnificent almost stemless plant of vigorous habit, with green stems and petioles, furnished with long soft white hairs; leaves green, dentate-ciliate nerves white, petioles long, erect red near the top; bracts large, somewhat heart-shaped, keeled ; pedicels stout red; ovary green; corolla very large, more than three inches in diameter, consisting of 4 petals, the two outer suborbicular, the two inner oblong-spathulate, of a bright vermilion red; staminal column nearly spherical.

4. *Secrétaire Rohner*, plant somewhat branching ; leaves small, narrow, dentate; flowers numerous, of medium size and of a deep magenta colour.

5. *Léon de St. Jean*, a branching very floriferous variety with small toothed leaves and semi double, rather ragged flowers, of a beautiful bright cérise.

6. *Madame Almelet*, a plant with long, green leaves and somewhat shrubby in habit, with small delicate pink flowers.

The foregoing six varieties are all extremely pretty, and might have found numerous companions in the splendid lot grown by Mr. Gaulain, but, as we said before, nearly all are good that are raised from mixed seed.

Duplification in the flower of tuberous-rooted Begonies, if not absolutely a new fact, was observed for the first time at Lyons, and has recently been repeated at Mr. Lemoine's, Nancy. The plant named by Mr. Gaulain in honour of Mr. Léon de St. Jean exhibits a decided tendency in this direction.

We understand that this variety has already furnished some noteworthy results at Nancy, to which we shall allude again very shortly.

E. A.

DATE PLUMS.

The recent introduction of some new Japanese varieties of Date Plum has given a new interest to the genus *Diospyros* not to be passed over.

The notes which follow are the results of actual observation and may therefore be worth putting on record in passing.

In the first place, we will say a few words respecting the state of the question both horticulturally and botanically.

Until within the last few years there were only three species and a few varieties of *Diospyros* cultivated out-of-doors in European gardens. The commonest, *D. lotus* from the Caucasus, also called the Italian Date Plum, as it is found in a half wild condition in the Italian peninsula, where it is known by its pleasing habit and yellow fruit, about the size of a cherry, upon which the thrushes and blackbirds feast in the Autumn.

Another species is *D. virginiana*, the Virginian Date Plum or Persimmon as it is called in America, a much larger plant in all its parts. It has handsome shining foliage, and its round, orange-yellow fruit is as large as a Green Gage Plum, and edible, though not particularly tasty. The remaining presumed species found in nurseries are in our opinion simply varieties of this.

In 1789, a third species was introduced from Japan, differing entirely from the two preceding and known in Japan as a fruit tree, under the name of Kaki. (*D. Kaki.*) This tree will only succeed in the orange region, where it bears a roundish fruit as large as a small apricot, yellow and sugary when ripe, and known under the name of *Figues caques.* It is now rather widely dispersed in the south of France. We saw a fine specimen of it in Italy in the botanic garden at Pisa, and Prof. Caruel, the Director, kindly gave us some of its fruit, which has something the taste of a thoroughly ripe medlar, but it is more sugary.

Things remained thus until about the year 1859, when the Paris Museum of Natural History received a consignment from Mr. E. Simon in China, which contained a new species of *Diospyros.* The plant grew and flowered, and shewed fruit in 1869. At first Mr. Carrière thought he had the true *D. Kaki*, but soon discovered his error and described the new plant as *D. costata.* Afterwards he attempted to show that the supposed *D. Kaki* cultivated in the South was really a Nepalese species, which he proposed to call *D. Roxburghii.* In reply to this, Mr. Decaisne declared the plant named *costata* by Carrière to be no other than the *D. Schi-tse* of Bunge.

The new tree was propagated and dispersed under the name of *D. costata.* We possess a fine specimen of it at Lacroix in Touraine, where it grows vigorously. Its large

shining leaves resembling those of *Magnolia Soulangeana*, and its luxuriant habit render it highly ornamental; and its handsome orange fruit, as large as a peach, ripening towards the end of Autumn, give it rank as a valuable fruit-tree.

There are, then, four well marked species of Date Plum, which we possess in Europe at the present time.

But there are also several badly defined varieties of North American origin in cultivation. Indeed they are scarcely worth the trouble of distinguishing, but we may roughly characterise them as follows, from an examination of the living plants in the nursery of Mr. André Leroy, at Angers.

What is generally held to be the typical *D. virginiana* is a handsome tree with a spreading crown, flat, acuminate, of glabrous and shining leaves, and a nearly spherical, slightly depressed fruit encircled at the base by a large collar formed of the persistent calyx: and besides this there are the following varieties :

1. *D. v. insignis*, of very slender habit with willow-like foliage.

2. *D. v. pubescens*, described as a species by the botanist Pursh, but in our opinion a mere variety having oblong acute leaves, clothed with soft hairs beneath and borne on long petioles.

3. *D. v. angustifolia*, the same as the type except that it has narrower leaves.

4. *D. v. villosa*, a very remarkable variety, of which the obtuse leaves recall *D. Kaki*, but its fruit is not yet known at Angers.

5. *D. v. purpurea*, a pretty variety, the leaves of which when fully developed change to a purple red.

6. *D. v. Perquini*, a beautiful tree with acuminate, shining leaves, closely approaching what we have seen in many other nurseries under the name of *D. calycina*.

7. *D. v. lucida*, the last, which we consider the most valuable of all. It is a slender, graceful tree with spreading cylindrical smooth ash-gray branches, medium-sized, glabrous and shining, yellow-veined leaves tapering to both ends, and supported on fine petioles. Its abundant sessile fruits are as large as a Green Gage Plum, perfectly spherical, slightly ribbed, surmounted by a cylindrical mucro, surrounded at the base by the accrescent calyx, about an inch broad, and assuming when ripe a beautiful orange colour. It contains a soft sugary pulp when ripe, recalling the flavour of apricot marmalade and honey. We tasted it in company with Mr Leroy and considered it superior to the fruit of all other varieties we had previously tried.

Great confusion prevails respecting the application of the names *D. intermedia*, *digyna* and *stricta*, found in English catalogues of forty years ago, and no faith can be placed in their present use in collections. They are all the issue of *D. virginiana*.

The principal object of this notice is to induce amateurs to enter more largely into the cultivation of the better varieties of the Virginian Date Plum. The species was introduced nearly 250 years ago (1629) and it is scarcely known even now. *D. costata* is even superior, but it has the disadvantage of being less hardy, not being able to resist the winters of Paris; it is still very rare, and must continue so for a considerable time, whilst *D. virginiana* is scarcely touched by the frost. In America the latter is esteemed as fruit-tree, under the name of *Persimmon*. Its bletted fruit is eaten with or without sugar or made into a preserve, like that of *D. Kaki* in Japan, of which we recently tasted some samples sent to the exhibition at Lyons by Mr Hénon. It is also empleyed in making a kind of cider, spirit, and beer with the addition of hops. Oven-dried they resemble the French prunes.

May the Date Plum be more widely grown in the deep cool soil of our parks and gardens, and especially the variety *lucida*, which Mr Leroy possesses quite true, and we shall have another handsome tree and another good fruit [1].

E. A.

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[1] It is doubtful whether the Date Plum would succeed in any part of England as a fruit tree, our autumns being too cloudy to bring its fruit to perfection; but it nevertheless deserves planting for its ornamental character alone. Although we have seen large trees of this species in England; we never met with it in fruit, possibly because it is dioecious? We may add that Mr W. P. Hiern, in his careful monograph of the *Ebenaceae*, refers *D. costata* to *D. Kaki*, although admits that they are quite distinct from a horticultherist's point of view.

W. B. H.

ROYAL HORTICULTURAL SOCIETY OF LONDON; SHOW OF CHRYSANTHEMUMS, FRUIT, ETC.

The following notes on this important show are from a more detailed report which appeared in the *Gardener's Chronicle*. Taking the amount (about £ 200) and the number of classes (sixty-six) into consideration, it is doubtful whether such a display as was brought together on this occasion in the conservatory and western arcade could anywhere else have been brought together, and the members of the Council may take the flattering unction to their souls that their vigourous management is meeting with its due reward in undiminished popularity amongst the craft. The display of Chrysanthemums in pots, which occupied the whole of a wide stage down the centre of the conservatory, was decidedly the best that has been held here for many years; while amongst the cut flowers, all of great merit, there were two of the finest groups of Japanese varieties it has ever been our good fortune to see, and which earned deserved praise for the skill of their producers. Of the fruit, Apples and Pears especially, it is a question whether greater numbers have not been staged at previous exhibitions (about 1500 dishes were shown on this occasion), but our recollection does not enable us to say that the quality, which ran of a high order of merit throughout, was ever better. The Jersey growers were, as usual, well to the front, carrying off the leading prizes for Pears, and many for Apples. It was a subject of general comment among the horticulturists present that by having all the classes open, English growers who desire to compete are obliged to do so at an immense disadvantage with their *confrères* in the Channel Islands; and as for all the other shows held during the year, the Society is almost entirely dependent upon the co-operation of the English growers, it is a question of very great importance for the Council to consider, whether they should not modify their schedule of prizes issued for next year, so as to confine the Channel Islands' growers to competition amongst themselves.

Rather an ingenious way of repairing damaged fruit was

discovered in a dish of large Apples staged by a Jersey exhibitor. It appears that one of his fruit was decayed or damaged, and to make this good he removed the bad portion and inserted a sound piece of another fruit in its place, finally covering the whole with a piece of Apple skin.

The manner of tying many of the Chrysanthemums in order to keep them dwarf, is open to severe criticism.

In the open class for twelve large-flowered varieties, Mr. James, gardener to W. F. Watson, Esq. of Isleworth, took the first prize with well-flowered, medium sized plants of good quality. Specimens of *Faust, Empress Eugénie, Jardin des Plantes, Mrs. Halliburton, Julia Lagrave, Antonelli* and *Lord Derby*, were remarkably good. The open class for twelve Pompon Chrysanthemums brought out four competitors, of whom Mr. Douglas, gardener to H. Withbourn, Esq. of Ilfords, stood first. The leading varieties in this class were : *Cedo Nulli, James Forsyth, St. Michaels, Bob, Mr Murray* and *Miss Julia*. The best specimen large-flowered Chrysanthemum from nurserymen was a very fine plant of the new *George Glenny*, soft prim rose yellow, contributed by Messrs. Cutbush and Son; and Mr R. Riggs, Lewisham, took the first for a specimen Pompon with a large plant of the familiar old variety *Bob*. The finest dozen blooms of Japanese varieties that we have ever seen came from Mr J. Hinnell, and included magnificent blooms of *The Sultan, Aurantium, Red Dragon, Fair Maid of Guernsey, Baron de Prackley, James Salter, Meg Merrilies*, and the *Daimio*.

The Gold Medal offered for a collection of not more than ten varieties of Grape, two bunches of each kind, was won by Messrs. H. Lane and Son, of great Berkhampstead, who put up large and excellent samples of *Muscat of Alexandria, Bowood Muscat, Muscat Hamburgh, Gros Colman, Trebbiano, Lady Downe's, Black Prince, Mrs Pince's Black Muscat*, etc.

We regret not having the space to give further extracts from the report of this excellent show. W. B. H.

ROSE JUDGING.

Our contemporary of the *Journal of Horticulture*, (one of the best of English Horticultural Journals), whose name we often have occasion to mention, formed a committee some time back with the view of obtaining the judgement of numerous growers on the merits of certain Roses; a subject of the greatest interest, enlisting our warmest sympathy. A list of the best Roses, to the number of 84, was drawn up, and submitted to some of the principal growers and amateurs in Great Britain for their opinion of the merits of the various kinds enumerated. A careful register of the votes given was kept. Thirty-eight replies were received in response to the demand of the Journal in question. They were brought together and tabulated by a celebrated rosarian, Mr. Joseph Hinton of Warminster. Curiously enough, the numbers of gardeners and amateurs were equal, thus giving an additional value to their votes. The Roses named received from 6 to 38 votes. We shall not give the entire list, but limit it to sixty of the varieties that obtained the greatest number of voices. Of course it will be understood that the list was intended for the climate of England, and that it would need modification for the climate of France, Belgium or Holland, and still more for the countries further north. At all events, it is interesting to have the opinion of thirty-eight of the best rosarians of England on the following Roses.

Maréchal Niel (*Pradel*)	38	votes.
Alfred Colomb (*Lacharme*)	38	„
Charles Lefebvre (*Lacharme*)	38	„
Madame de Rothschild (*Pernet*)	38	„
Marie Baumann (*Baumann*)	37	„
La France (*Guillot fils*)	37	„
Louis Van Houtte (*Lacharme*)	37	„
Madame V. Verdier (*V. Verdier*)	37	„
Comtesse d'Oxford (*Guillot père*)	36	„
Etienne Levet (*Levet*)	36	„
John Hopper (*Ward*)	36	„
Duke of Edinburgh (*Paul and Son*)	36	„
François Michelon (*Levet*)	34	„
Mademoiselle Verdier (*Guillot fils*)	34	„
Marquise de Castellane (*Vernet*)	33	„
Sénateur Vaisse (*Guillot père*)	33	„
Pierre Notting (*Portemer*)	32	„
Devoniensis (*Curtis*)	32	„
Xavier Olibo (*Lacharme*)	32	votes.
Docteur Andry (*E. Verdier*)	31	„
Marguerite de St-Amand (*Sansal*)	31	„
Gloire de Dijon (*Jacotot*)	30	„
Marie Rady (*Fontaine*)	30	„
Souvenir d'un ami (*Bélot Defougère*)	29	„
Ferdinand de Lesseps (*E. Verdier*)	27	„
Camille de Rohan (*E. Verdier*)	26	„
Emilie Hausberg (*Lévêque*)	25	„
Souvenir d'Elise	24	„
Dupuy-Jamain (*Jamain*)	24	„
Camille Bernardin (*Gautreau*)	23	„
Catherine Mermet (*Guillot fils*)	23	„
Edouard Morren (*Granger*)	22	„
Abel Grand (*Damaizin*)	22	„
Exposition de Brie (*Granger*)	21	„
Victor Verdier (*Lacharme*)	21	„
Maurice Bernardin (*Granger*)	20	„
Horace Vernet (*Guillot fils*)	19	„
Paul Neyron (*Levet*)	19	„
Madame Wood (*E. Verdier*)	19	„
Madame Willermoz (*Lacharme*)	18	„
Niphetos	17	„
Madame Schwartz (*Liabaud*)	17	„
Souvenir de la Malmaison	16	„
Fisher Holmes (*E. Verdier*)	15	„
Wellington (*Granger*)	15	„
Comtesse de Chabrillant (*Marest*)	14	„
Monsieur Noman (*Guillot* père)	14	„
Clémence Joigneaux (*Gonod*)	14	„
Duchesse de Cyglus (*C. Verdier*)	14	„
Belle Lyonnaise (*Levet*)	12	„
Beauty of Waltham (*W. Paul*)	12	„
Général Jacqueminot	12	„
Céline Forestier (*A. Leroy*)	12	„
Marie de Cambridge (*Paul and Sons*)	12	„
Jules Margottin	11	„
Baron Bonstetten (*Liabaud*)	11	„
Thérèse Levet (*Levet*)	11	„
Madame Lacharme (*Lacharme*)	10	„
Annie Laxton (*Laxton*)	10	„
La Lyonnaise (*Lacharme*)	10	„

The preceding list is exceedingly useful, as it will enable amateurs to make selections according to their taste of one to sixty Roses, based upon the experience of the most competent men. But the work is not finished. It should now be adapted to diverse climates, and we hope soon to find the means of obtaining this desirable result. E. A.

HORTICULTURAL CHRONICLE.

October, 1874.

— The Pelargonium Society. — An association has been formed in London under the title of the Pelargonium Society, the object of which is the improvement of this genus so rich in beautiful plants. We have received the circular of this society, and it is very promising.

It is proposed to offer prizes for the best new varieties obtained either at home or abroad; to determine the value of certain varieties for greenhouse and open air culture; to subject new varieties to comparative cultivation, and judge them (the soil used for this purpose to be furnished by the Royal Horticultural Society from its garden at Chiswick); to keep a register of new varieties, giving the history of their origin; and facilitate exchange between English and foreign raisers. The course taken by the Society in giving its operation an international character is highly praiseworthy, and will doubtless secure it many additional supporters. All communications should be addressed to Mr. Denny, Stoke Newington, London. The subscription has been fixed at £ 1 per annum.

— The Phylloxera in Austria and Switzerland. — Notwithstanding the strong assurances given by several journals that this scourge was on the decrease, we regret to announce that nothing goes to prove even a partial disappearance. It has recently made its appearance in Austria, having been discovered in the central fruit district of Lower Austria, on some vines imported from America in 1869. An order to root out all the American vines was at once given. This was carried out most effectively, and it is hoped that the evil may thus be overcome; but who knows what precautions would be sufficient to arrest the spread of an insect possessed of such amazing powers of reproduction?

Unfortunately, too, we have to report a new region of Europe where it has shown itself. It is in Switzerland, at Prégny, in the Canton of Geneva. Yet the Swiss federal Government had taken most particular precautions to prevent the invasion of this dreaded insect. Since last year not a single vine has been permitted to pass into the country. But all was of no avail, and the enemy has baffled the most active surveillance.

— Grafting of the Pear on the Mountain Ash. — A correspondent of the *Journal of Horticulture* records the successful grafting of the Pear upon the Mountain Ash, *Pirus aucuparia*. The growth is fully maintained, but the fruit is retarded, harder than on the Quince, and inferior in quality, especially the Butter Pears. The trees are growing in a poor soil, at an elevation of 450 feet above the level of the sea.

— English expedition to the Noth Pole. — It is announced that the British Admiralty is making preparations for another polar expedition. Science at large will receive this decision with much gratification. It is much to be desired that a botanist should form one of the staff, but we believe it has been decided that no person connected with the Royal Navy is to be permitted to join the expedition, on the ground that the work of the naturalist will be purely mechanical, and limited to forming collections.

We think it is a pity to lose such an opportunity of extending our knowledge, for, although some of the officers may collect very industriously, they may not do it intelligently, whereas a trained botanist would not encumber himself with well known things, except from new localities, and would at once detect new forms.

— Flowering retarded by artificial cold. — Mr. Tellier, director of the refrigerating apparatus at Auteuil, Paris, is at present engaged upon a series of experiments, which, if carefully conducted, may furnish some interesting results. He hopes to be able to retard almost at will the blooming of certain plants by subjecting them to artificial cold in the warm season. He has already operated upon some bulbous plants, and at the meeting of the *Société centrale d'Horticulture* of July 9, he exhibited three tufts of *Narcissus biflorus* in flower, which had been kept back four months by artificial cold. Certainly, here is an opening for a series of experiments of the most interesting description. Let Mr. Tellier pursue his trials, and his successes, equally with his failures, may lead gardeners to new and productive methods of cultivating plants. Moreover, the question has already begun to attract the attention of some minds, as in the analogous case of the recent attempts to flower the Saffron Crocus out of season.

— Flowering of Jalap in the open air. — The Jalap, *Exogonium purga*, Benth., the plant that produces the well known purgative, flowered during the present autumn at Kew. The plant in question is trained against a wall with a south aspect. Its pink flowers are exceedingly attractive, and it is interesting to see this subtropical plant flourishing in the open air. It has been in cultivation at Kew for some years.

— Engravings of the Bon Jardinier (1). — This useful book fully maintains its ancient reputation. We have lately received the 23rd edition of this standard work on horticulture. It is a *vade-mecum* indispensable to every gardener and amateur who can read French. From year to year in has been revised, remodelled and augmented. Whoever has the *Bon Jardinier* should also possess the engravings. To give an idea of its contents would be a difficult matter. It is an encyclopedia of figures, from the elements of botany and gardening: layers, cuttings, grafts, training; apparatus for ordinary culture and forcing: frames, houses, heating apparatus; tools and garden appliances, to the formation and embellishment of gardens. Altogether it is deserving of our hearty support.

Ed. André.

(1) One vol. of 620 pages with 667 engravings, 23rd edition. Librairie agricole, 26, rue Jacob, Paris. Price 7 francs.

PL. CLXXXII.

SCIADOCALYX × LUCIANI, ED. ANDRÉ.

NAT. ORD. GESNERIACEAE.

ETYMOLOGY: Σκιάς, ἀδος, sunshade, and καλυξ, calyx, in allusion to the form of the calyx.

GENERIC CHARACTER: *Annulus* integer vel 5 crenatus, *calyx* horizontaliter patens; *corolla* in calyce subrecta, basi subobliqua, tubo fere recto, inflato, fauce constricto, limbo subaeqanli patente; *stigma* bifidum; *antherae* inclusae; (Regel, *Gartenflora*, 1853, p. 358.)

CHARACTER OF THE HYBRID: suffruticosa: caules, petioli, pedunculi, calyces, corollae tubus pilis mollibus erectis scarlatinis dense vestiti; *caules* pauci erecti, robusti, cylindrici; *folia* petiolata ovato-oblonga utrinque acuminata crenata deflexa, petiolis brevibus crassis supra canaliculatis basi amplexicaulibus; *flores* in axilla foliorum superiorum paniculato-conferti; *pedunculi* 2-3 flori, erecti, teretes, 3-4 cent. longi, apice bibracteati bracteis lanceolatis; *pedicelli* aequilongi; calyx lanatus tubo brevissimo, laciniis subcordatis patulis vix umbraculiformibus; *corollae* tubus 3-4 cent. longus, vivide scarlatinus hirsutus, superne rectus, inferne ventricosus ad faucem contractus, lobis 5 patulis rosaceis suborbiculatis integerrimis glabris roseo-violaceis, atropurpureo-punctatis; *stylus* haud exsertus, *stigma* furcatum; *stamina* inclusa, antheris ovatis; *glandulae* 5 liberae basi ovarii annulatim dispositae. — In horto Lindeniano Gandavensi è fecundatione adulterina (inter *Sciadocalycem digitalifloram* et *Tydaeam pardinam*) nata, anno 1873. — E. A.

Sciadocalyx × Luciani, Ed. André, *hybrid nov.*

When in 1870 we published in this work the beautiful New-Granadian Gesnerad which goes by the name of *Sciadocalyx digitaliflora*, we had great confidence in its future and our hopes have not been frustrated. Independently of its intrinsic qualities, of which profuse flowering is the principal, it has already furnished some valuable acquisitions to the hybridiser. The one of which we here give the portrait is a plant of surpassing beauty. It was obtained by Mr. Lucien Linden, to whom we dedicate it, by a cross between *S. digitaliflora* and *Tydaea pardina* (Vol. XX, pl. 152 *Ill. Hort.*). It is a plant of most luxuriant growth, and a glance at our plate will give an idea of the brilliancy of its flowers.

One of the most remarkable characters exhibited by this hybrid is the great reduction in the development of the lobes of the calyx, which in *S. digitaliflora* are large and spreading like a parasol, hence the generic name, as explained above.

Other hybrids between *Sciadocalyx* and other genera have been obtained, and they will be discussed in due order.

E. A.

EMBELLISHMENT OF GARDENS.

The castle and park of La Celle St-Cloud, near Paris, are celebrated in the history of horticulture. Here was formed the splendid collection of Orchids, the fame of which was world-wide. The late proprietor, Mr Pescatore, brought them together at the suggestion of his countryman, Mr Linden, who dedicated a fine species to him, the *Odontoglossum Pescatorei*, and who published, under the title of *Pescatorea*, the grand work on Orchids which is known to everybody.

The Orchids of La Celle have been partly dispersed since the death of Mr Pescatore. But the park and glass-houses, thanks to the enlightened zeal of the present proprietor, Mr Dutreux-Pescatore, a distinguished amateur, have gained in appearance and ornamentation.

Bedding-out, as is well known, has been practiced in England for many years, but it is only just making its way and establishing itself in France. Geometrical flower-gardening is certainly practiced in Germany, but the designs are usually very complicated, and never possessed much attraction for us.

Continental gardeners are beginning to adopt a more elaborate system of decorative bedding-out, and we have much pleasure in being able to affirm having already seen some examples that exhibited a purer and more refined taste than was to be expected on the other side of the channel.

The following description is a proof of this assertion. It is very simple, but harmonious in effect to the highest degree, both in the proportions of the lines of different plants and in the selection of colours.

The bed is very nearly twenty four feet in diameter. It is situated at the narrowed end of a hollowed lawn, where it rises as a conical mound of pleasing appearance. Its height in the centre is about 3 feet. This centre is occupied by a fine specimen of *Cordyline indivisa* with drooping foliage. Immediately around the stem of this plant is a circle of *Iresine Herbstii* kept rather dwarf, and forming a deep purple groundwork to it. The next circle is composed of *Pelargonium Manglesii*. And then come the designs on the slope of the cone, which has a very gentle inclination, and is hollowed in the middle.

1. Border *Echeveria secunda* (3 rows.)
2. *Sedum dasyphyllum*, very slender and glaucescent, dotted over with tufts of *Teleianthera amaena*.
3. Border *Sedum carneum variegatum*, about 4 1/2 inches wide.
4. *Alternanthera paronychioides*, about 6 inches wide.
5. Ring of *Pelargonium Manglesii* }
6. Ground of *Iresine Lindeni* } described above.
7. *Cordyline indivisa* }

Nothing in the way of succulent plants, the objects of so much care in England, would surpass it. Let any one try to reproduce this bed, and he will thank us for having obtained the permission of Mr. Dutreux to publish it. E. A.

Etab. Chromo. de L. Stroobant, à Gand.

L'ILLUSTRATION HORTICOLE.

J. Linden, publ.

184

Etab. Chromo. de C. Stroobant, à Gand

L'Illustration Horticole.

J. Linden publ.

PL. CLXXXIV.

THEOPHRASTA (?) IMPERIALIS.

We are still obliged to employ the provisional name of this handsome tree as the title of our article. Since the publication of our notice (1874, p. 83), renewed attempts to determine its exact affinities have failed. The herbariums and libraries of the principal botanical establishments in Europe have been searched again in vain. We must therefore await the arrival of flowers from Brazil, whither we have sent a requisition for them. Meanwhile we must request our readers to consult future numbers for the true name of this curious plant.

However, our researches have brought to light some further information, which may be of interest here: The first living specimen introduced into Europe is still in existence in the garden of Mrs Legrelle-d'Hanis, at Berchem, lez-Anvers. Mr. Linden recollects having seen it there about the year 1846, under the name of *Theophrasta imperialis.* In 1849, Mr. Libon sent living plants of it to Mr. De Jonghe, at Brussels. A few years afterwards, Mr. Linden himself received a consignment of several hundred young plants, collected by his traveller, Mr. Marius Porte; and since then it has spread all over Europe. Among the seedlings were several seeds scarcely germinated, which enabled Mr. Linden to determine that it was neither a *Curatella* nor a *Theophrasta*, but certainly a member of the *Sapotaceae.*

According to Mr. Houllet, the able and modest chief of the in-door department of the *Museum* gardens of Paris, the first specimens received at this establishment were sent by Mr. Porte, who gave the province of Rio as its place of growth.

A handsome specimen was planted out in the big stove house in the *Jardin des Plantes*, where it still remains, but has not yet flowered. Mr. Decaisne having studied the plant, thought from its habit and foliage that it must be some *Dilleniaceae*, and, it is said, assigned to it the name of *Curatella speciosa.*

In 1865, Mr. Linden received a fresh consignment of it, through the agency of Mr. Glaziou, the learned director of the *Passeio publico* of Rio de Janeiro. We were inclined to think that our plant approached the genus *Labatia* of Martius, but the rugose testa of the seeds, and the peltate hairs, similar to those of the *Malpighiaceae*, found in this genus, remove it considerably.

How much it is to be regretted that the study of histology is still so little advanced, otherwise a section or two of its tissues would have perhaps sufficed to determine its genus, just as an examination of its vegetation, the determination of the presence of the laticiferous vessels, and the structure of the seed indicated its natural affinities to those conversant with the characters of the *Sapotaceae.*

To the foregoing we can add one more interesting piece of information respecting the habitat of this noble plant. It has now been ascertained that it grows on mount Tijuca in the chain of Corcovado, in the province of Rio. It is remarkable that so grand a tree, growing at the very gates of Rio de Janeiro, should have hitherto escaped the notice of botanists.

We hope, however, to be able to lift the veil which conceals its distinguishing characters, and give our readers its name.

E. A.

NEW STRAWBERRIES.

We have lately received a list of four new varieties of Strawberry obtained from seed by Mr. Riffaud, the well-known raiser, of Châlons-sur-Marne, who raised the variety *Docteur Nicaise,* and subsequently many other fine varieties. The following are those of 1874, which have been tried and adopted by Mr. de Lambertye.

Madame Auguste Combez. — Fruit very large, pear-shaped, ribbed, of fine shape and deep red colour, highly glazed, seeds very prominent. Flesh tinged with salmon, white in the centre, perfumed, sugary, of exquisitely delicate flavour. Plant vigorous, second early.

Marie de Gourcy. — Fruit very large, triangular, deep red, varnished, seeds slightly depressed. Flesh rich, tinted, agreeably acid, highly perfumed. Bears transport well, on account of the firmness of its flesh. Plant very robust and hardy, extremely prolific, early.

Albert Machet. — Fruit very large and handsome in shape, elongated and almost cylindrical. Flesh white slightly tinged with salmon, slightly acid; juice brisk, abundant, flavour very agreeable. A very free-growing, hardy, fertile variety, second early.

La Prodigue. — Fruit medium size, cone-shaped, deep red; seeds slightly elevated. Flesh full, white, juice sugary and brisk; flavour very fine with a very decided raspberry taste, quality extra. A hardy, very productive, early variety.

To these four varieties we may add those of 1873, to which we have previously referred, and which amateurs have since had an opportunity of trying. They are: *Aglaé de Bernet, Edouard André, Augustin Chrétien, Comte d'Esclaibes.*

Amongst the seedlings of Dr Nicaise and Mr. Riffaud there are still some varieties of the first rank, which amateurs of strawberries will be glad to know. The following are first-class: *Duc de Magenta, Berthe Montjoye, Marie Nicaise, Auguste Nicaise, Anna de Rothschild, Gabrielle, Abd-el-Kader, Passe partout, Perfection, Rubis* and *Vulcain.*

The weeding-out of a collection of strawberries is a difficult task. Different soils do not suit all varieties. The better plan is to try side by side as many of the varieties recommended as possible, and make a selection after proving their relative merits.

P. Ergeau.

PL. CLXXXV.

CAMELLIA MISS MINNIE MERRITT.

NAT. ORD. TERNSTROEMIACEAE.

For ETYMOLOGY and GENERIC and SPECIFIC CHARACTERS, see *Ill. Hort.* under plate CLXVIII.

Character of the variety : Leaves spreading revolute, acutely acuminate; flowers large and elegant, petals distant imbricated orbicular spreading recurved, central ones erect mucronate, outer ones slightly indented, all of a delicate salmon-pink, in the way of *Jubilee,* deeper towards the centre, white on the margin, and traversed by slender longitudinal forked stripes.

E. A.

CARTER'S GREEN GAGE TOMATO.

Under this singular name a new variety of Tomato was recently exhibited by Messrs J. Carter and C° at one of the meetings of the Horticultural Society of London, which body accorded it a first-class certificate for its delicious aroma and distinct character. The fruit is of medium or small size, roundish in shape, perfectly smooth, and of a delicate citron colour slightly tinged with pink. In appearance it is totally different from any variety we know, suggesting to Messrs. Carter the idea of comparing it to a Green Gage. The exquisite flavour of this variety adds greatly to its merits.

NEW ROSES FOR THE AUTUMN, 1874.

The novelties in Roses for 1874 are said to be very remarkable. The nature of this journal not permitting us to mention the names of the raiser of the different varieties, we simply enumerate the following, which may readily be obtained from any of the large growers, towards the end of the winter.

Marie Opoix, moderately vigorous, branches straight, flowers medium or large, full, well formed, standing well up, yellowish in the centre, occasionally dotted with pink. Tea.

Adanson, a strong grower, flower medium or large, full, well formed, bright amaranth shading off to red. Hybrid Perpetual.

Casimir Périer, a very strong grower, with large very double, well shaped, deep ruby-red flowers, passing to bright red. Hybrid Perpetual.

Aline Sisley, a vigorous growing variety with large or medium, double flowers, of good shape, varying from rose purple to violet-red shaded ; a new colour in the Tea section.

Marie Guillot, a strong grower, flowers large, very double, well formed, imbricated, of a beautiful white tinged with yellow. Tea.

Comte de Sembui, a vigorous grower with stout branches ; flowers large, full, of good shape, salmon tinged with pink, petals silvery on the outside. A variety of the first order. Tea.

Jean Ducher, a very vigorous growing variety with straight branches, flowers large, full, globular, yellow shaded with salmon, tinted with peach red within, very floriferous.

Madame Devoucoux, moderately vigorous with straight branches, flowers medium size, full, well formed, canary yellow. Tea.

La Rosière, very vigorous, flowers large, full, of fine form, fiery amaranth red, crimson blueish black at the edge, highly effective. Hybrid Perpetual.

Villaret de Joyeuse, a strong grower, flowers very large, full, well formed, rose shaded, very handsome. Hybrid Perpetual.

Thérèse Loth, a vigorous grower, flowers medium or large, full, delicate pink, bright rose in the centre. Tea.

Alexandre Chomer, a very vigorous growing variety, flowers large, full, purple-red, velvety, shaded with violet. Hybrid Perpetual.

Anne Blanchon, a strong grower, flowers large, very double, expanding well, cup-shaped, bright rose, a seedling from *Anna Alexieff.* Hybrid Perpetual.

Thérèse Genevay, a vigorous grower, flowers large full well formed, cup-shaped of a beautiful peach blossom pink, a very free-bloomer. A handsome and effective variety. Tea.

Perle des Jardins, a vigorous grower, flowers very large, full, well formed, peduncle firm, pale yellow, sometimes deep canary, a profuse bloomer. Tea.

Shirley Hibberd, a strong grower, flowers medium size, full, cup-shaped, nankeen or chamois yellow, a new colour. A superb, free flowering variety. Tea.

Reine des Massifs, a strong grower, flowers in clusters, medium size, full, of a beautiful salmon yellow, sometimes tinged with copper. A magnificent free-flowering variety for grouping. Noisette.

Antoine Mouton, vigorous, flowers very large, well formed, of a beautiful bright pink, reverse of the petals silvery. Extra good variety. Hybrid Perpetual.

Duchess of Edinburgh, very vigorous, flowers very large and full, of good shape, with broad regular petals, colour delicate pink, shaded, silvery, deeper towards the centre. Very fragrant. Hybrid Perpetual.

E. A.

L'ILLUSTRATION HORTICOLE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

ORNAMENTAL GARDENING.

WEEPING TREES.

Weeping trees add considerably to the embellishment of a garden, but many of the most picturesque of them are insufficiently known. The following list, which appeared in the *Bulletin horticole*, a new organ of the eight Horticultural Societies of the East of Belgium, may be of service to planters and designers of gardens, who have not the names of all these ornamental trees in their heads.

White Weeping Birch, obtained by Mr. Bonamy, of Toulouse; exceedingly elegant.

Young's Weeping Birch, very light and graceful; first observed in Hampshire.

Scarlet Weeping Oak, foliage scarlet in Autumn, a native of Massachusetts (United States).

English Weeping Oak, a variety of the common Oak, obtained at Orléans by Mr. Dauvesse.

Weeping Ash, a well known variety detected on the estate of Count de Mérode, at Westerloo, Antwerp.

Weeping gold-barked Ash, bark golden yellow.

Weeping variegated Ash, leaves variegated with green and white.

Weeping Beech, a magnificent tree having several stages of pendulous branches.

Weeping Walnut, found at Waterloo.

Weeping Willow, the commonest and most beautiful of all weeping trees.

Salomon's Weeping Willow, a vigorous elegant variety, obtained by Mr. Villevieille.

Kilmarnock Weeping Willow, Salix Caprea.

Weeping Sophora, Sophora japonica pendula.

Weeping Silver Lime.

» » » with variegated leaves.

Common Weeping Elm, with large leaves.

This list has its interest, doubtless, but there is a large number of species and varieties with pendulous branches that are not included in it. Though perhaps not able to complete it, we may be permitted to add our contribution of the names of those which occur to us at the moment, and which deserve a place in the garden and park on account of their graceful or picturesque habit.

Willow-leaved Pear, *Pirus salicifolia*, foliage silvery, downy, very elegant.

Weeping Hornbeam, *Carpinus Betulus pendula*.

Weeping Mahaleb, *Prunus Mahaleb pendula*.

Weeping Cherry, *Cerasus Avium pendula*.

Grecian Poplar, *Populus graeca*.

Weeping Poplar, *Populus virginiana pendula*.

Weeping mountain Ash, *Sorbus Aucuparia pendula*.

Weeping Laburnum, *Cytisus Laburnum pendulum*.

Weeping Thorn, *Crataegus pendula*, Lodd.

Spreading Thorn, *C. linearis*.

Tamarisk, *Tamarix tetrandra* and others.

American Weeping Elm, *Ulmus americana pendula*.

Bujot's Gleditschia, *Gleditschia Bujoti*.

Weeping Black Willow, *Salix nigra pendula*.

Weeping Acacia, *Robinia pseudacacia pendula*.

Dwarf Weeping Pavia, *Pavia pumila pendula*.

Weeping Peach, *Persica vulgaris pendula*.

Weeping Elaeagnus, *Elaeagnus reflexa*.

Imperial Alder, *Alnus glutinosa imperialis*, branches half pendulous.

Weeping Silver Fir, *Abies pectinata pendula*.

Weeping Spruce Fir, *Abies Picea pendula*.

Weeping Canadian Fir, *Tsuga canadensis*.

Drooping Arbor-Vitae, *Biota orientalis filiformis*.

Weeping Mount Atlas Cedar, *Cedrus atlantica pendula*.

Weeping Cypress, *Cupressus religiosa*.

Weeping Juniper, *Juniperus oblonga pendula*.

Weeping Red Cedar, *J. virginiana pendula*.

Weeping Larch, *Larix europaea pendula*.

Weeping Chinese Larch, *Glyptostrobus chinensis pendula*.

Dowaston's Yew, *Taxus baccata Dowastoni*, and several other conifers.

Here are thirty-one species or varieties added to the preceding list, which includes fifteen, making a total of forty-six weeping trees. We are quite sure that this does not exhaust the number, but we wished to show what resources are at the disposal of landscape gardeners, the greater part of whom either do not know or ignore them. The art of one branch of ornamental gardening depends entirely upon the skilful use of weeping trees, especially in mountainous countries and in rocky situations. It is a subject upon which we might enlarge here, but we must defer it until another occasion.

E. A.

BOTANICAL CONGRESS AT FLORENCE.

At the first meeting of the International Botanical Congress presided over by Dr Hooker, Mr. Planchon discoursed on *Phylloxera vastatrix*, Professor A. Targioni Tozetti following him on the same subject.

Mr. Famintzin then made a communication on the spores of *Ceratium* and *Lycogala*.

Prof. Orphanides, of Athens, read a memoir on the different species of *Colchicum* peculiar to Greece.

Mr. Schimper gave an account of an *Annularia* (*Sphoenophyllum*) found in the gneiss of Monte-Bianco, to which Mr. Ball replied, and drew an answer from Mr. Schimper in which Mr. Desor concurred.

Prof. Caruel of Pisa spoke of the organography of the flowers of *Cynomorium coccineum*, the curious Balanophorea of the Mediterranean region. Messrs. Weddell, Hofmeister, and Planchon spoke on the same subject.

The second meeting was held under the presidency of Mr. De Candolle. Prof. Koch made a communication respecting the Bamboos of China and Japan.

The pollen of Conifers was the subject of a paper by

Mr. Tchistiakoff; Mr. Radlkofer read a notice of the anomalies in the trunk of four genera of Sapindaceæ, and he presented a monograph of the genus *Serjania*.

Mr. Weddell spoke of the nature and functions of gonidia; and the following gentlemen took part in the discussion which ensued: Messrs. Famintzin, Caruel, Fischer of Waldheim, Gibelli, Suringar, Schimper and Kanitz.

Mr. Delpino entertained the company with his researches into the history of the Nostocs.

Mr. Castracane read a memoir on the reproduction of Diatoms, in which he combats the opinion of Mr. Pfitzer, who replied himself to the observations of Mr. Castracane.

Mr. Hiern communicated a memoir on the value of the determinations of fossil plants, and alluded more especially to the *Ebenaceae.*

Mr. Delchevalerie presented a specimen of fossil wood found in the Libyan desert.

Mr. Bunge presided at the third meeting, when Mr. De Candolle presented a treatise on the unequal distribution of Alpine plants; and Messrs. Ball and Tschihatscheff made some remarks on the same subject.

This was followed by a communication from Mr. Timiriazeff treating of the action of light on the decomposition of carbonic acid by means of granules of chlorophyll, and the action of different rays of the solar spectrum.

The magnifying powers of the microscope formed the subject of a paper by prof. Suringar of Leyden.

Mr. Heldreich spoke of some new species of plants found in Greece.

Mr. de Gelesnow studied the distribution of water in the different parts of the plants.

Mr. Fischer of Waldheim spoke on the *Ustilagineae.*

Mr. Borodine communicated the result of his researches on the influence of carbonic acid during the germination of seeds.

Mr. Arcangeli made some observations on the floral envelop, to which Dr. Ascherson replied.

Mr. Bargellini presented a memoir on the vegetable parasites of man.

Mr. Lanzi spoke on Bacterias, raising a discussion in which several members took part.

Mr. Orphanides exhibited a rich collection of new and rare plants collected in Greece.

Mr. Ungern-Sternberg read a monograph of the *Salicornieae.*

Mr. Gennero first submitted some observations on *Cytinus* followed by an exposition of some facts recorded in the botanic garden of Cagliari, concluding with a consideration of insular floras.

Mr. Cesati mentioned a preparation of wax seen at the exhibition, the product of *Guarea splendens.*

Mr. Orphanides proposed a vote of thanks to the city of Pisa, the director of the botanic garden and the authorities, and requested the president to convey the thanks of the whole congress to the person who had done as much for its success. Mr. De Candolle supported the motion, and expressed a hope of the speedy recovery of prof. Parlatore, and proposed to name a commission to convey their congratulations to prof. Parlatore, on the importance and richness of the botanical collections. In particular he praised the central herbarium and its arrangement. These propositions were received with acclamation, and Messrs. Decandolle, Gelesnow and Cesati were named to form the commission.

Mr. Bubani proposed that some mark of acknowledgement be made in memory of the grand duke Leopold II of Tuscany, who had done so much for botany. This was followed by various other votes of thanks, and Mr. Ridolfi read a closing speech. The syndic, Mr. Peruzzi, returned thanks on behalf of the institute for the philosophical communications, and the meeting broke up.

LIST OF THE VICE-PRESIDENTS OF THE CONGRESS.

Alsace-Lorraine	Mr. Schimper	Strasbourg.
Australia	Ch. Moore	Sydney.
Austro-Hungary	Fenzl	Vienna.
» »	Archbishop Haynald	Kalocsa.
» »	Mr. Muzio Tommazini	Trieste.
Bavaria	Radlkoffer	Munich.
Belgium	de Cannart d'Hamale	Malines.
»	Linden	Brussels.
Colombia	J. Triana	Bogota.
Denmark	J. Lange	Copenhagen.
France	H. Baillon	Paris.
»	J. Planchon	Montpellier.
»	Weddell	Poitiers.
Great Britain	Bentham	London.
»	Hooker	Kew.
Ireland	D. Moore	Dublin.
Duchy of Baden	Seubert	Carlsruhe.
Greece	J. Orphanides	Athens.
Holland	Rauwenhoff	Utrecht.
»	W. Suringar	Leyden.
Hamburg	H. Reichenbach	
Hanover	H. Wendland	Herrenhausen.
Prussia	C. Koch	Berlin.
Russia	Al. Bunge	Dorpat.
»	De Gelesnow	St. Petersburg.
»	Regel	»
»	Tschihatschef	»
Saxe-Weimar	E. Strasburger	Jena.
Sweden and Norway	Andersson	Stockholm.
» »	Schübeler	Christiania.
Switzerland	A. De Candolle	Geneva.
»	J. Desor	»
Wurtemberg	Hofmeister	Stuttgardt.

E. A.

ON THE FORMATION AND KEEPING OF GARDEN WALKS. (1)

In England, as a rule, the making and maintenance of garden walks is much better understood and carried out than is the case on the Continent, especially in France, Belgium and Germany, with some very few exceptions. A more or less even beaten surface, with a thin layer of gravel, sometimes river gravel, but frequently dirty pit-gravel, suffices in these countries to form rough paths, on which walking is both laborious and unpleasant.

Doubtless, it is difficult to make firm, even walks everywhere, on account of the expense where there are long distances to be traversed. But more care should be devoted to the attainment of this desirable object in the flower garden, and in the vicinity of the dwelling house. To this end we furnish the following instructions.

In England, according to the locality or the fancy of the proprietor or gardener, the walks are covered with a layer of sand or asphalte, or some particular composition. In almost all cases great care is exercised in the preparation of a proper foundation, termed pitching. On a well levelled or rammed surface, according as it may be a path-way or broad walk, a paving of flat stones or bricks is laid, either edgewise or flat, as close together as possible, though even then they are sufficiently distant to admit of easy drainage. Upon this foundation, which ranges from four inches to a foot in thickness, according to the requirements in regard to solidity, a layer of flints is put, and crushed and rolled down as firmly as possible. Over this, a thin layer of fine Jersey gravel is spread, varying in colour from pale yellow to red. The walk is then subjected to another thorough rolling, and when finished forms a comfortable and clean promenade in all seasons, far pleasanter than the harsh, loose gravel usually employed in Paris, which slips from under the feet.

Yet more carefully prepared are some of the foot-ways around English houses, and especially the courts and paths in the front gardens in London leading from the street to the house. It does not come within our province to describe the process of asphalting, as it is a special calling in all the chief towns. But for garden purposes the proportion of sand is larger.

The third method, varying a little in the composition and proportions of the materials used, is less generally known. It consists usually of a mixture of coarse sand and brees or fine coal and cinders, and quick lime, which is slaked and mixed with the two first ingredients in the proportion of about one fifth. A layer, from one to one and a half inches thick, is evenly spread over the prepared firm level ground of the future path, and afterwards firmly beaten down to an equal smooth surface. The lime combines with the other elements and forms a solid cement. The centre of the path should be rounded a little to allow the water flow away readily, and then nothing will interfare with the firmness of this artificial surface, which requires no keeping in order or repairing, and constitutes an agreeable promenade.

In the south of France and in the north of Italy we have seen another method in operation, which answers well and forms a sound walk, and is at the same time agreeable to the eye. It is effected is this way:

On the properly levelled and rammed, or macadamised surface, a layer of gravel is spread, the composition of which varies according to the nature of the geological formation whence it is obtained. For instance, in most of the towns of Italy and the south of France, the hill streams bring down the blueish water-worn gravel of the carboniferous system, or a fine gravel of a slaty colour, which is procured as fine as possible and rolled firmly to prevent it from slipping under the feet. But instead of filling up the whole width of the path with this gravel, a watershed is left on each side, varying in depth according to the general fall of the ground.

The watercourses on each side of the walk should be composed of pure Portland cement in cold countries, and cement mixed with common mortar in temperate climates. In this cement, before it sets, small (about the size of a pigeon's egg) water-washed oval stones are inserted, the smaller end downwards. These stones prevent the cement or mortar from frittering away by the rapid course of the water, and give an ornamental finish to the work.

The edging, which we have supposed to be Box, may be formed of turf, flowers, ivy or anything else, as ornamental wood-work, cast-iron or tiles. We can vouch for the convenience and comfort of walks constructed in this manner. They may be rather expensive at first. But the cost will vary according to the material used and the price of labour; and it is soon repaid, as they require nothing done to them beyond an occasional sweeping. Besides, they may be restricted to the flower garden and the immediate neigbourhood of the dwelling.

We have said nothing of the more sumptuous and costly walks paved with encaustic tiles etc., believing it of more general service to point out a moderately cheap and efficient mode of procedure.

E. A.

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(1) Although this was written more especially for the French edition, it is equally applicable to many parts of England.

W. B. H.

OXERA PULCHELLA.

Oxera pulchella, discovered, named and described by Labillardière in 1824 as one of the handsomest plants of New Caledonia, has also been described by Sprengel under the name of *Oncoma pulchellum*. It is a charming shrub belonging to the *Verbenaceae*, and very little known in cultivation, although it thrives admirably in the south of Europe. In the climate of Paris it requires protection in winter, and thus treated it will produce its flowers at the latter end of the autumn and in early winter as it does every year in the gardens of Hamma, Algiers.

It is a glabrous shrub with rounded, compressed, verrucose, elongated, sarmentose branches, slightly thickened at the joints. Leaves opposite, shortly petiolate, ovate-oblong, obtuse, shining, quite entire. Flowers drooping, arranged in solitary, axillary cymes; peduncles as long as the petioles and twice or thrice trichotomous; pedicels long; bracts large, foliaceous. Calyx about half an inch long, deeply divided into four oblong, acute lobes. Corolla resembling that of the purple Fox-glove in shape and size, bulging on the anterior side; lobes rounded, oval, obtuse; upper lip pubescent within. Stamens four, two much exceeding the others and equalling the style in length.

Its pretty flowers are of a pure white, and are produced throughhout the whole length of the branches. In winter it presents a most attractive appearance, fully justifying the specific name given by Labillardiere to this beautiful New-Caledonian shrub.

E. A.

ON BAMBOOS.

The genus *Bambusa* belongs to the *Gramineae*, and its numerous species are at home in the tropical and temperate regions of Africa, Asia and America.

Bamboos grow in tufts or spread, producing many stems, which are reed-like, woody, branching, sometimes arborescent, but varying greatly in dimensions, according to the species or variety. Those of *B. arundinacea* frequently attain a size and strength sufficient for use in building dwellings of light construction. Others have much smaller stems from which matting, cordage, etc. are prepared. *B. spinosa* is armed with numerous sharp-pointed spines, and forms excellent impenetrable hedges. The young shoots of some species are eaten as a vegetable; they are used when quite young and tender, and just issuing from the ground. On the other hand, species with creeping rhizomes may be advantageously employed to hold together the soil of sand hillocks, while their stems furnish capital walking canes, whip-handles, umbrella and parasol sticks, fishing rods, and numerous other useful articles. Indeed, in the far East, especially, the applications of the Bamboo are innumerable.

Bamboos may be divided into two distinct sections, based upon their mode of growth. Some grow in dense tufts, like *B. arundinacea*, *B. falcata*, *B. gracilis*, *B. Hookerae*, *B. scriptoria*, *B. spinosa*, *B. verticillata*, *B. vulgaris* and *B. vulgaris vittata*. These species make their growth in summer.

The Bamboos forming the second group have underground, running rhizomes, which throw up stems in all directions, and quickly take possession of large areas of land. Here belong *B. aurea*, *B. Metake*, *B. nigra*, *B. Simoni* and *B. viridi-glaucescens*. These species make their growth in the spring.

All of the Bamboos flourish in Algeria, and grow with extreme rapidity. In the gardens of Hamma, Algiers, *B. arundinacea* forms stems from 45 to 65 feet high, with a girth of nearly eighteen inches at the base. *B. Hookerae*, and *B. vulgaris*, although of vigorous habit, produce slenderer, less lofty stems. Another species, *B. mitis*, long known in cultivation, and which now plays an important part in industry, as well as in ornamental gardening, in the South of France, develops stems in our establishment from 30 to 40 feet high with a circumference of about 6 to 8 inches. The rest are smaller in stature than those mentioned.

The culture of Bamboos is not difficult. Nevertheless, to have them in all their beauty it is necessary to choose a rich, deep, free, cool, permeable soil; and to be careful to select suitable situations, according to the requirements of each species. Thus, for instance, *B. arundinacea*, *B. Hookerae*, *B. vulgaris*, and *B. verticillata* need heat, and therefore they can only be grown with advantage in the warmer parts of Algeria and similar countries, where they will not be subject to frost. *B. aurea*, *B. falcata*, *B. gracilis*, *B. metake*, *B. mitis*, *B. nigra*, *B. Simoni* and *B. viridi-glaucescens*, grow equally as well in the hot regions, but in consequence of their natural habitats at greater altitudes, they wil succeed in cooler localities of the Mediterranean region, and bear several degrees of frost without injury. *B. mitis* and *B. nigra* are the two species of most importance from a commercial point of view, and are already spreading widely in the South of France.

The Bamboos of the temperate regions succeed perfectly in the climate of Angers, Nantes, the coast of Brittany and Normandy, and the south-west of England and Ireland, In the climate of Paris and London they are grown in isolated clumps on lawns, etc. for ornamental purposes, but it frequently happens that they are cut down to the ground by the frosts.

Bamboos with creeping rhizomes may be transplanted at any time during the winter, preferably in January or February; but the tufted species may very well be left until April. They should be removed straightway from the nursery beds with a ball of earth, and replanted in their new destination. While out of the ground their roots should be protected from the air. Their stems should be freely pruned and not left very tall, and a copious watering should immediately follow the planting. Care should be taken to keep the soil moderately moist, especially in hot weather, during the first season.

The stems of Bamboos should not be cut for use before the end of the third year at the beginning of spring.

(Translated from Catalogue n° 3 of the gardens of Hamma.)

W. B. H.

HORTICULTURAL CHRONICLE.

November, 1874.

— Exhibition and Pomological Congress in Holland. — We learn that the pomologists of Holland are organising a Fruit show at Amsterdam in 1875, and that a Pomological Congress will be held at the same time. The programme is in course of preparation. A committee of organisation, consisting of Mr Van Lennep, president, Mr J. P. Galesloot, secretary, and nine ordinary members, drawn from the foremost men in pomological science in Holland, are busy making arrangements for the reception of the guests, etc. We well know the liberal hospitality of the Netherlands. It is now just ten years ago that foreign horticulturists brought away such pleasant memories on the occasion of the international Exhibition of 1865. We shall return to this subject again in due time.

— Pelargonium Society of London. — The following is the complete *Schedule of Prizes* offered by this Society to be competed for at South Kensington, July 21, 1875. This competition will take place by permission of the Royal Horticultural Society, and subject to the regulations issued by the Society.

Class 1. — Twelve distinct varieties of Zonal Pelargoniums, " florists' class, „ in pots of eight inches in diameter. Open £ 8 and £ 5.

Class 2. — Twelve distinct varieties of Zonal Pelargoniums, " decorative class, „ in pots of eight inches in diameter. Open £ 8 and £ 5.

Class 3. — Thirty distinct varieties of Zonal Pelargoniums, " irrespective of class, „ in pots not exceeding six inches in diameter. Open £ 6, £. 4.

Note : — The varieties to be shown in the above classes are to be of the flowering section, not those with variegated leaves. Class 1, designated " florists' class „ is intended to include only those varieties which have finely-shaped flowers according to the florists' model. Class 2 is intended for profuse-flowering, showy varieties, otherwise known as hybrid nosegays.

Class 4. — Six ornamental Cape Pelargoniums, dissimilar. Open, £ 3, £ 2.

Class 5. — Best hybrid Pelargonium, of distinct character. Open, £ 2, £ 1.

Class 6. — Twenty-four Pelargoniums, cut blooms, single trusses, dissimilar. Open £ 2, £ 1.

Class 7. — Twelve Pelargoniums, cut blooms, single trusses, dissimilar. Amateurs. £, 2, £ 1.

Note. — The judges may in their discretion, and subject to the approval of the committee, award a prize to any exhibit worthy of particular notice, which may not be provided for in the schedule. They may also withhold any of the above prizes if the exhibit be not of sufficient merit.

Conditions of competition. — It is imperative that every variety exhibited have conspicuously appended to it its own name, together with that of the raiser, such names to be either printed or distinctly written on a card. — The " Chiswick Standard „ to be adopted in regulating the sizes of the pots: that is, " 8-inch pots „ measure 8 inches across and 8 inches deep inside, at a point 1 inch below the top edge; 6-inch pots in like manner measure 6 inches in depth and 6 inches in width inside, at an inch below the edge.

— Monument to the memory of Siebold. — The Imperial Royal Horticultural Society of Vienna has started a subscription with the object of raising a monument to Von Siebold in his native town of Würzbourg. The reputation of Von Siebold is world-wide. His travels in Japan and the influence he exercised there in the interests of Holland are known to everybody, also his numerous valuable introductions of all sorts, the foundation of the Japanese museum at Leyden, the publication of the *Flora Japonica*, and his horticultural establishments in Holland and Japan for the diffusion of Japanese plants. We knew colonel Von Siebold personally; and we with all other lovers of horticulture and botany heartily approve the idea of erecting a monument to his memory.

— Cheap Vanilla. — At a recent meeting of the *Académie des Sciences*, Dr Hoffmann made a communication to the effect that two of his pupils, Messrs Tiemann and Karmann, had discovered a new substance in the sap of the Pine, which would replace Vanilla. They have named it *Vaniline.* It appears that essence of Vanilla to the value of £ 4 may be extracted from an adult Pine tree without injuring it. We shall see what will be the result of this curious discovery.

— Linden's Establishment on Lake Major. — Mr J. Linden has recently established a branch business at Pallanza, Lake Major, in connection with and on the estate of a celebrated amateur, the Marquis delle Valle de Casanova. The delightful climate of this country will yield the most favourable results in the cultivation of many of Mr Linden's new and rare plants.

— Three new Eranthemums. — Three new species of this genus recently received at Kew are remarkable for the beauty and brillant colouring of their foliage. They have neither of them flowered, and only bear provisional names given by Messrs. Veitch, who obtained them from the South Pacific Islands. Great things are said of these three novelties.

— Erythrina Parcellii. — According to a correspondent of the *Gardeners' Chronicle* the plant known under this name, and sent out this year, is the variety *picta* of the *Erythrina indica* of Linnaeus. This name should therefore be corrected, and retained as a synonym of *E. indica picta.* The plant is figured in the journal above cited (1874, p. 393).

— Sale of Orchids at Farnham Castle. — This noted collection was sold on the 17 and 18 of September last, several plants fetching long prices : *Dendrochilum filiforme* £ 25, *Angræcum eburneum superbum* £ 24, *Lælia anceps Dawsoni* £ 17, *Dendrobium Kingianum* £ 11, etc. The passion for fine specimens is still rife in England.

— Fungus show at Aberdeen. — This exhibition, which opened September 17, was a very important one. It included a special branch of botany and the culture of a class of plants which we hope to be able to place before our readers more in detail.

— A Belgian Horticultural Annual. — We are informed that a publication of this nature is to appear under the joint editorship of Messrs. Pynaert, Rodigas, Burvenich and Van Hulle of the State School of Horticulture, Ghent. The value of such a work will be thoroughly appreciated by those who use Dr Hoggs' *Yearbook;* and it could not be in better hands than those of the gentlemen named.

— Medinilla magnifica. — This grand Melastomaceous plant was recently represented in the *Gardeners' Chronicle* (1874, p. 421) by a figure that not only pourtrays an exceedingly fine specimen, but which is also a masterpiece of wood-engraving by Mr Worthington Smith. We are glad of an opportunity of testifying to the growing artistic finish this distinguished artist is contributing to the illustrations of the *Gardeners' Chronicle.* The plant figured was grown by Mr Fairbairn, gardener to Mr Terry, at Peterborough House, Fulham. It was in a twelve-inch pot, and the spread and height of its branches were about 6 feet 6 inches, and it bore at one time eighty enormous panicles of its splendid rosepink flowers.

— Horticultural Club in London. — A meeting was recently holden at St-James's Hall for the purpose of taking the preliminary steps in the formation of a Horticultural Club. The movement is supported by a large number of the leading men in horticulture, etc., and there appears every prospect of the project proving successful, an issue we most cordially wish it.

— Begonia Emile Lesueur. — This beautiful plant also belongs to the tuberous-rooted section, being the issue of *B. boliviensis* fertilised by *B. Pearcei.* It was raised by Mr. Nolot. It is a very strong-growing variety, attaining a height of about thirty inches. Leaves elongated, glaucous, spotted and nerved brown, 8 to 10 inches long by 2 to 2 ½ inches broad. An extremely profuse blooming variety, with very large bright minium red flowers, nearly three inches in diameter. It should be treated, like all other tuberous-rooted, with a period of rest in winter.

— Obituary. — It is with feelings of great regret that we announce the death of a lady of great talent, Mrs. Hooker, the wife of the learned director of Kew Gardens, who was suddenly taken from her family on Nov. 13. The deceased lady was a daughter of the late professor Henslow, and herself well versed in botanical knowledge and other branches of learning. She was of great assistance to her husband in his multifarious duties, and to her we are indebted for a good translation of Le Maout and Decaisne's *Traité de Botanique*, and other literary labours. We desire to join with others in our expressions of sympathy with Dr Hooker on his sad bereavement.

Ed. A. and W. B. H.

THE WOOLHOPE FUNGUS CLUB.

A large gathering of botanists and amateurs, forming the Woolhope club, assembled at Hereford this year (Sept. 29 to Oct. 2) for the purpose of collecting and continuing the study of the edible and noxious species of this large family. On Sept. 29, a party left Ludlow for Downton Castle grounds, where a considerable number of curious species, including two new to the British flora *(Agaricus unicolor* and *A. cohaerens)* were found.

Amongst others collected were : *Cortinarius cinnabarinus, C. cinnamomeus*, *Marasmius fœtidus*, *Agaricus obscurus*, *ermineus*, *nanus* and *ulmarius*, *Coprinus picaceus*, etc. The following day they discovered : *Agaricus euchrous, Cordiceps alutacea, Spathularia flavida, Ascobolus viridis, Agaricus cucumis, A. plexipes, Peziza repanda*, etc. The third day's excursion was to Stoke Edith Park, the seat of Lady Emily Foley. Here were found : *Hygrophorus chrysodon, Agaricus strangulatus ?, Lycoperdon echinatum, Clavaria flaccida, Agaricus pyxiodorus, odorus, fragrans, mucidus, mappa, inversus*, and *Hygrophorus calyptræformis.*

The trip being over, the members busied themselves during the evening examining specimens of *Fungi* sent from all parts, amongst them a *Peziza aurantia* 8 ½ inches across, *Agaricus mucidus* 6 ½ inches across, *Sparassis crispa* from Pine woods in Shropshire, *Agaricus Junonius, A. gloiocephalus,* 10 inches high and nearly 18 inches round, *Leotia circinans, Lactarius controversus, Radulum fagineum, Lactarius vitellinus,* etc. In England everything finishes with a Homeric dinner, and the jovial party of Fungologists could not depart from the old custom. Accordingly they dined off Salmis of *Lycoperdon giganteum,* cutlets with *Marasmius oreades* sauce, “ Vegetable Lamb's Kidneys „ *Lactarius deliciosus,* and *Coprinus* soup, etc., and nobody suffered the slightest inconvenience from this peculiar repast.

Garstone Park was visited on the last day (Oct. 2) and furnished *Agaricus jubatus*, *carbonarius*, and *pyxidatus*, *Coprinus domesticus, Hygrophorus russeo-coriaceus, H. Colemannianus, Lactarius controversus, Clavaria rufa, Cantharellus radicosus*, etc.

The reading of divers papers on mycology and profitable conversations on various topics filled up the time of the meetings of this cheerful and instructive club, as we are informed in Mr. W. Smith's humorous account of the proceedings. The club shewed its appreciation of the assistance always so cheerfully accorded by the artist named by presenting him with a suitable and characteristic testimonial.

E. A.

186

L'ILLUSTRATION HORTICOLE.

J. Linden publ.

PL. CLXXXVI.

FOURCROYA LINDENI, JACOBY.

NAT. ORD. AMARYLLIDEAE.

ETYMOLOGY: Dedicated by Ventenat to the celebrated French chemist Fourcroy.

GENERIC CHARACTER: *perigonium* superum, corollaceum, hexaphyllum, regulare, persistens (Zucc.) (deciduum Endl.); foliolis oblongis, multinerviis, subaequilongis, patentibus, petalinis paulo latioribus et terminoribus. *Stamina* sex, fundo floris inserta (Zucc.) (epigyna Endl.), perigonio breviora, subaequalia, erecta. *Filamenta* subulata, inferne strumoso-dilatata et incrassata, distincta, in alabastro recta, persistentia. *Antherae* lineari oblongae biloculares loculis bilocellatis (Zucc.), emarginatae, basi bilobae, dorso medio affixae, mobiles interne secundum longitudinem dehiscentes. *Ovarium* inferum, subtrigonum, triloculare; *ovula* in loculis crebra, angulo interno per duas series affixa, horizontalia, anatropa? *Columna* stylina erecta, triangularis, basi strumoso-incrassata et triquetra, fistulosa, stamina superans, persistens. *Stigma* obtusum, trigonum, vix trilobum, perforatum fimbriatum. *Capsula* oblonga, trigona, trisulca, coriacea vel sublignosa, trilocularis, loculicido-trivalvis. *Semina* in loculis crebra, biseriata, plano compressa, horizontaliter superposita. — *Plantae dracaenaeformes, in America calidiore cis aequatorem indigenae, longaevae, semel florentes. Caulis simplicissimus, saepe giganteus, interdum subnullus, foliis delapsis cicatrisatus. Folia in apice caulis dense spiraliter disposita, e basi semivaginante longissima, angusta, coriacea, saepe pungentia, margine dentato spinosa vel inermia. Scapus centralis, erectus, altissimus, paniculato-ramosus, multiflorus, bracteatus, saepe bubillifer. Flores pedunculati, fasciculati, penduli, in ramulis racemoso-dispositi, virescenti-albi vel flavidi, pedunculis cum flore articulatis, basi bracteolatis.*

Fourcroya (Furcraed), Ventenat, in *Usteri Annal.* XIX, 511.

Charact. ex Kunth. *Enum. Pl.*, V. 839.

SPECIFIC CHARACTER: acaulis: *folia* radicalia caespitosa primum curvato-patula, mox arrecta rigida, 1^m et ultra longa, ad medium 12-15 cent. lata, lineari-lanceolata acuminata apice canaliculato-pungentia, inferne angustata, ima basi breviter dilatato amplexantia, glabra, nervosa, dentata (dentibus marginalibus remotis singulis v. geminis albis acumine incurvato v. decurvato rubescente, superne raris v. deficientibus), viridia, nitida, marginibus eleganter albo-vittata; *flores....* — In valle fluminis Caucae prope Cali Novo-Granatensium. — 1868. — V. v. in h. Lindeniano. — E. A.

Fourcroya Lindeni, Jacoby, in Lind. Catal.

This magnificent plant is one of the few introduced from tropical America with leaves variegated in the natural state. It is a native of the province of Cauca (N. Grenada), where it was discovered in 1868, in the valley of Cali. Only a small number of plants was found, and these were forwarded to Mr. Linden. We have not yet seen the flowers, though the leaves which served for our description exceed a yard in length.

The beautiful erect habit of this species, together with its elegant bordered leaves, after the manner of a *Dracaena*, render it a decorative plant of the first order, which it is desirable to see widely spread in the temperate conservatories of Europe.

E. A.

LIVERPOOL HORTICULTURAL SOCIETY.

This society's autumn exhibition was held in St. George's Hall, and an extremely fine display of Chrysanthemums and fruit was brought together. Liverpool stands second to no place in regard to Chrysanthemum culture. We borrow the following particulars from the *Gardeners' Chronicle.*

For six naturally grown large-flowered Chrysanthemums Mr. Morris, gardener to John Robinson, Esq., was first with a very good lot, the plants just sufficiently tied to prevent them having a straggling appearance. They were strong, and well clothed with healthy leaves, the flowers thinned so as to get them up large and full, carrying about an average of a dozen and a half blooms each.

For six large-flowered varieties trained low, Mr. Brown, gardener to James Fletcher, Esq., was first with a beautifully flowered group, well furnished with glossy green foliage, the best being *Lady Talford* (white) unequalled for pot culture, *Mrs. J. Rundle* and *Jersey Nugget.*

For three large-flowered varieties, Mr. Phythian, gardener to J. R. Pattinson, Esq., was first with *Pink Perfection*, *Mrs. G Rundle* and *Prince Alfred.* The former is a fine sort, having that indispensable property for pot culture, an ability to perfect a considerable number of flowers. In Mr. Wilson's three, which were second, was a beautiful example of the fine white *Virgin Queen.*

For a single plant of any large-flowered variety, Mr. Whitfield was first with the pale golden-yellow *Guernsey Nugget;* and Mr. Wilson second with *Mrs. Rundle.*

The competition for six Pompons was very close. Mr. Phythian was first, staging beautiful examples of the white and lilac forms of *Cedo Nulli* with *Aigle d'Or, Aurora Borealis, Sir J. Paxton* and *Amy.*

The competition in cut blooms of Chrysanthemum was also very keen. The following are some of the best varieties: *Empress of India*, *Queen of England*, *Jardin des Plantes*, *Alfred Salter, Princess of Wales, White Venus, Lady Hardinge, Novelty,* and *John Salter.* W. B. H.

PL. CLXXXVII.

DRACAENA (CORDYLINE) TROUBETZKOI, LINDEN ET ANDRÉ.

NAT. ORD. ASPARAGINEAE.

ETYMOLOGY and GENERIC CHARACTER, see *Ill. Hort.* under plate CLXIII.

SPECIFIC CHARACTER: affinis *Drac. Reginae* et *albicanti; caulis* arboreus, simplex v. pauciramosus; *folia* permulta, assurgentia, petiolata, late ovato-lanceolata, apice breviter acuminata acuta, basi in petiolum canaliculatum semi-clausum decurrentia, laete viridia, niveo-marginata sparsimque maculata; *flores*...: — Crescit in insulis (?) Oceani meridionalis. — In hort. Lind. Gandav. allata, anno 1872. — Ad viv. desc. haud flor. — Ed. A.

Dracaena (*Cordyline*) Troubetzkoi, Lind. et And., *sp. nov.*

This handsome *Dracaena* is one of the latest introductions from the Melanesian Islands. It was sent to Mr. Linden in 1872. It is named in honour of Prince Troubetzkoy, a distinguished amateur of horticulture, who possesses a charming estate at Intra, Lake Major, where the rarest and most beautiful plants luxuriate in a delicious climate.

This species belongs to the section having a robust dwarf habit of growth. It is intermediate between *D. Regina* and *albicans*, but it is more slender than the former, and much more ornamental than the latter, with its rich marginal bands of beautiful white running down the wings of the petiole, and appearing here and there on the blade in the form of elegant blotches.

Besides, the whole attraction of these plants is centred in their foliage. Like many other species and varieties of this genus, which has become so confused since the numerous introductions from the Pacific Islands, its flowers are unknown. The botanists who ventures to attempt to reduce this chaos to order will have a difficult task; but the time has not yet come to think of such a thing. For this purpose it will be necessary to collect as many as possible of the forms in cultivation, arrange them according to their habitats and study not only their mode of growth and foliage, but also their flowers and fruits.

It will be understood that although we employ the name *Dracaena* for horticultural purposes, we are perfectly aware that this and allied species really belong more properly to *Cordyline*.

E. A.

THE KITCHEN GARDEN AND ORCHARD.

CUCUMBER DUKE OF EDINBURGH.

This fine new variety was raised by Messrs. Daniels brothers of Norwich, who sent it out last season.

It is remarkable for its hardiness and extreme productiveness, as well as the enormous size of its fruit, which attains a length of upwards of three feet. Mr. Abbot, an eminent grower of Cucumbers, calculates that the total lenght of 107 fruits grown by him was 248 feet, or an average of 32 inches each fruit. The colour of the fruit is bright green almost up to maturity, and the spines are pearly white. It is of first-rate quality, and like the « Marquis of Lorne » may be pronounced one of the best varieties in cultivation.

E. A.

ORNAMENTAL GARDENING.

CATTLEYA GIGAS IN ENGLAND.

A very handsome specimen of this noble species introduced and named by Mr. Linden, and described by us (*Ill. hort.*, 1870, p. 70 & 122), has recently flowered in the collection of Lord Londesborough at Norbiton, thanks to the care of his able gardener, Mr. Denning. The plant was considered worthy of a beautiful woodcut in the *Gardeners' Chronicle* (p. 617) due to the pencil of Mr. W. Smith. We also find some notes on the culture of this species by Mr. Denning himself, which will not be without interest to orchid growers.

This plant, like most other Cattleyas, requires a considerable amount of heat to grow it satisfactorily, especially during the summer months, say about 70° by night to 85° by day. When the short days come on, about the end of October, a night temperature of about 58° will suffice, with a rise, by fire heat, to 65° by day, allowing an additional rise of 10° by sunshine. It will grow well on blocks of rough-barked Hawthorn or Pear, or if not procurable, very fibrous peat may be substituted to pot in, taking care that the pot is rather small for the plant, for if over-potted, it should ever get too wet, and its roots would quickly perish. This species, like *C. Dowiana*, is very delicate in its root action, and must never have a mass of material unless very great care is used in watering. The atmosphere on the other hand should be kept as moist as possible.

Under such conditions this splendid plant will carry as many as nine flowers on one pseudo bulb, each flower about eight inches broad, conspicuous by the two large pale yellow crescent-shaped spots at the mouth of the throat, from which radiate golden yellow rays, and the extraordinary richness of the crimson labellum, on a deep rose pink ground.

E. A.

Lith. Chromo. de C. Stroobant, à Gand. L'Illustration Horticole. J. Linden. publ.

L'Illustration Horticole.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

PL. CLXXXVIII.

CLAVIJA RODEKIANA, LINDEN ET ANDRÉ.

NAT. ORD. THEOPHRASTEAE.

ETYMOLOGY: Named after Clavijo Faxardo, a Spanish naturalist, and translator of Buffon.

GENERIC CHARACTER: *Calyx* profunde quinquefidus, laciniis imbricatis, obtusis. *Corolla* hypogyna, tubo brevi, fauce in appendices carnosas cum limbi quinquelobi laciniis obtusis, aestivatione imbricatis, sub anthesi patentibus alternas tumente. *Stamina* 5, imo corollae tubo inserta, faucem vix superantia, filamenta in tubum connata; *antherae* extrorsae, biloculares, trigonae, in capitulum decemradiatum conniventes, longitudinaliter dehiscentes. *Ovarium* uniloculare, placenta basilari parva. *Ovula* pauca, adscendentim amphitropa. *Stylus* brevissimus, *stigma* abbreviato-bilobum. *Bacca* globosa, unilocularis. *Semina* pauca, placentae basilari-globosae, liberae inserta, umbilico prope basim ventrali, testa mucilaginosa. *Embryo* intra albumen corneum excentricus, cotyledonibus ovatis, planis, radicula infera. — *Frutices Americae tropicae, caule simplici, apice frondoso, foliis alternis, oblongis, coriaceis, integerrimis v. spinoso-dentatis, racemis axillaribus simplicissimis, strictis, folio brevioribus, bracteis minutissimis, floribus nutantibus, abortu saepe unisexualibus albis v. aurantiacis.* — Endl. *Gen.* 4230.

Clavija, Ruiz et Pavon, *Prodr.* 124, t. 36.

Theophrastae spec. Lin. *Gen.* 207.

Eresia, Plumier, *Gen.* 8.

SPECIFIC CHARACTER: *arbor* erecta, simplicicaulis, trunco rufo rugoso; *folia* ad apicem caulis v. ramorum congesta subverticillata, glaberrima, nervosa, 40-50 cent. longa, 10-15 lata, elongata obovato-oblonga acuta integerrima, basi longe attenuata, nitide-viridia subtus glaucescentia, petiolo brevissimo (1-2 cent. longo) basi crassiusculo, nigrescente, laminae marginibus subundulatis, costa supra vix elevata, subtus prominentissima augustata, nervis pennatis subparallelis cum nervulis retiformibus ante marginem anastomosantibus; *flores* in racemis axillaribus nutantibus permultis dispositi, breviter pedicellati, rhachi filiformi rufescente tomentelloso, pedicellis basi bractea minuscula acuta praeditis; *calycis* sublanati lobi 5 suborbiculati marginibus membranaceis; *corolla* rosacea (5 mill. diam.) lobis 5 sepalis duplo majoribus rotundatis patulis cochleatis glabris aurantiacis marginibus eroso-fimbriatis, *drupa*..... — Crescit in sylvis prope *Juncam* in Andibus Bogotensibus (Nova-Granata) et in ejusdem reipublicae provincia dicta Antioquia. — Legit primus cl. Triana, annis 1851-57: in hort. Lind. vivam allata, 1871. — Ad. viv. desc. — E. A.

Clavija Rodekiana, Linden et André, *sp. nov.*

Theophrasta Rodekiana, Lind. Cat.

This new species is a native of New-Grenada, and is dedicated by us to Mr. E. Rodek, an intelligent amateur of gardening in Vienna. Its first discovery dates from the time of the chorographic exploration of N. Grenada, when Mr. Triana found it near Junca, in the Andes of Bogota, about 1650 feet above the level of the sea. We were so fortunate as to find an authentic unnamed specimen of it among the dried Colombian plants given by Mr. Triana to the Paris Museum. Living plants were received by Mr. Linden in 1871, from the province of Antioquia.

This will prove a remarkable addition to the genus, the species of which require a careful revision, most of them having being sent out under the incorrect name of *Theophrasta*.

E. A.

EXHIBITIONS.

EXHIBITION OF THE SOCIÉTÉ CENTRALE DE PARIS.

This Flower, Fruit and Vegetable Show was held on Oct. 14, and was far superior to what might hare been expected at so late a season.

The prize of honour, a set of Sèvres vases, was accorded to Messrs. Baltet brothers, of Troyes, for a magnificent collection of fruits, comprising 220 varieties of Pear, 100 varieties of Apple, and some new seedling Pears, of which we can say no more at present, as they were still unnamed.

Messrs. Croux and Sons of Aulnay, near Sceaux, gained a gold medal for a collection of fruits very nearly equal in quality to the preceding, and even more numerous in varieties. These gentlemen also exhibited an unnamed new seedling Pear, raised from the *Doyenné d'hiver*, of enormous size, and, it is said, of excellent quality.

There were several other collections of fruits, nearly all of them good, and mostly containing superb specimens, attesting the superiority of the French system of culture in this useful branch of gardening.

The show of vegetables was exceedingly fine, an unusual circumstance in Paris.

The 70 varieties of Potatos exhibited by Mr. Chouvet, rue du Pont neuf, Paris, were well grown, and what is rarer, accurately named.

Ornamental plants were not numerous, but they included some interesting exhibits. We may mention the double-flowered tuberous Begonias, sent by Mr. Lemoine of Nancy, which we shall notice in another place, and the seedling Gesneriaceae shown by Mr. Vallerand of Bois-Colombes, Seine-et-Oise, amongst which were some hybrids between *Sciadocalyx* and *Tydaea*, very curious and remarkable plants of great interest for winter flowering.

E. A.

CARNIVOROUS PLANTS.

We have received from Dr Hooker, the director of Kew Gardens, a pamphlet which has caused some noise in botanical circles. It treats of those extraordinary organisms of the vegetable kingdom, in which it is believed that functions have been discovered identical with the digestive process in beings belonging to the animal kingdom.

Indeed, they have received the appellation of *carnivorous plants.*

For some time past this question has occupied the minds of scientific men in England. As an open partisan of the transmutation theory, of which Darwin has made himself the champion, Dr Hooker, has submitted the curious members of the vegetable kingdom called pitcher-plants to a new series of experiments. The real physiological import of the fly-catching organs of these plants was still undefined. He communicated the results of his investigations in an inaugural address to the members of the British Association at the meeting at Belfast in August last, and gave a summary of the actual position of our knowledge on this subject. The following is an epitome of Dr Hooker's paper :

Various observers have described with more or less accuracy the habits of such vegetable sportsmen as the Sun-dew, the Venus'Fly-trap and the Pitcher plants, but few have inquired into their motives; and the views of those who have most accurately appreciated these have not met with that general acceptance which they deserved. Quite recently the subject has acquired a new interest, from the researches of Mr Darwin into the phenomena which accompany the placing of albuminous substances on the leaves of *Drosera* and *Pinguicula*, and which, in the opinion of a very eminent physiologist, prove, in the case of *Dionaea,* that this plant digests exactly the same substances, and in exactly the same way, that the human stomach does.

About 1768, Ellis, a well known English naturalist, sent to Linnæus a drawing of a plant to which he gave the poetical name of *Dionaea.* He added a description of this remarkable insect-trap, and expressed an opinion that the plant extracted nourishment from the captured insect. But he said that it was certain the plant could not distinguish an animal from a vegetable or mineral substance; for if a straw or pin were introduced between the lobes, it would grasp it full as fast as if it was an insect. Linnæus, however, only saw in these wonderful actions extreme sensitiveness in the leaves, and did not accept Ellis's account of the death-stroke which the insects received from the three stiff hairs in the centre of each lobe of the leaf.

For about a century the history of the plant was very little advanced. Sixty years after Linnæus wrote, Dr Curtis of Wilmington (North Carolina) published the following accurate scientific observatious : — « Each half of the leaf is a little concave on the inner side, where are placed three delicate hair like organs, in such an order that an insect can hardly traverse it without interfering with one of them, when the two sides suddenly collapse and enclose the prey with a force surpassing an insect's effort to escape. The fringe of hairs of the opposite sides of a leaf interlace like the fingers of two hands clasped together. The sensitiveness resides only in these hair-like processes, as the leaf may be touched or pressed in any other part without sensible effects.

In 1868 an American botanist, Mr. Clanby, while staying in the *Dionaea* district, studied the habits of the plant pretty carefully. His first idea was that the leaf had the power of dissolving animal matter, which was then allowed to flow along the trough-like petiole to the root, thus furnishing the plant with highly nitrogenous food. By feeding the leaves with beef he found, however, that it was completely dissolved and absorbed; the leaf opening again with a dry surface, and ready for another meal, though no longer as active. He found that cheese disagreed horribly with the leaves, turning them black, and finally killing them. He also describes the futile attempts of the *Curculio* to escape.

From experiments undertaken by Dr. Sanderson at the instigation of Mr. Darwin it was proved to demonstration that when a leaf of *Dionaea* contracts, the effects produced are precisely similar to those which occur when muscle contracts, thus exhibiting another property believed to be peculiar to the animal kingdom.

The Sun-dews possess similar properties although in a less degree. In 1780, Dr. Whateley, an English surgeon, observed that their leaves closed up and imprisoned insects. Roth had also observed the same phenomenon, though he did not publish it till later. An ant placed by him on the leaf of *D. rotundifolia* was seized by the contracting hairs, and drowned in the glutinous fluid secreted by the glands in the space of fifteen minutes.

These facts were for a long time disputed and derided, but renewed investigations within the last fifteen years by Nitschke, Miss Treat, Darwin, Burnett and others have served to verify them. It has even been observed that the leaves would retain insects, but reopened if they were deceived by substituting some mineral substance for the organic.

The Sarracenias or Pitcher-plants of North America exhibit the same faculties. The first fact observed about their pitchers was that when they grew they contained water.

In 1829 Burnett wrote a paper containing a good many original ideas, in which he very strongly insisted on the existence of a true digestive process in the case of *Sarracenia* analogous to that which takes place in the stomach of an animal. There are two very different types of pitcher in *Sarracenia,* and probably three. These may be primarily classified into those with the mouth open and the lid erect, and which consequently receive the rain water in more or less abundance; and those with the mouth closed by the lid into which the rain can hardly, if at all, find ingress. The observations of Drs. Mc Bride and Mellichamp have enlightened botanists considerably on the physiology of *Sarracenia variolaris*, indicating the presence of honey-secreting glands that attract the insects which are detained in the pitcher by deflexed hairs, and the more they struggle to free themselves, the more hopelessly they become entangled. The water contained in the pitcher is also noxious to insects, which has been proved by immersing then in pure water and this fluid.

The tissues of the internal surfaces of the pitchers are sin-

gularly beautiful. They have been described in one species only, the *S. purpurea*, by Auguste Vogl; but from this, Dr. Hooker says, all other species which he has examined differ materially. Beginning from the upper part of the pitcher, there are four surfaces, which he defines as follows:

1. *An attractive surface*, occupying the inner surface of the lid, which is covered (in common with the mouth of the pitcher) with minute honey-secreting glands; and is more highly coloured than any other part of the pitcher, in order to attract insects to the honey.

2. *A conducting surface*, which is opaque, formed of glossy cells, which are produced into deflexed, short, conical, spinous processes, forming a surface down which an insect slips, and affording no foothold to an insect attempting to crawl up again.

3. *A glandular surface*, (seen in *S. purpurea*) which occupies a considerable portion of the cavity of the pitcher below the conducting surface. It is studded with glands, and has a polished surface, thus also affording no foothold for escaping insects.

4. *A detentive surface*, which occupies the lower part of the pitcher, or sometimes nearly its whole length. It possesses no cuticle, and is covered with deflexed, rigid, glass-like needle-formed striated hairs, which further converge towards the axis of the diminishing cavity, thus effectually preventing the egress of an insect. It is very curious that in *S. purpurea*, which has an open pitcher, so formed as to receive and retain a maximum of rain, no honey secretion has hitherto been found, nor has any water been seen to be secreted.

Darlingtonia californica, an allied plant, still more peculiar in its structure, offers analogous properties. Dr Hooker affirms that its brilliant colours serve to attract insects which fertilize the flowers and enter the pitchers where they perish. Speaking of the pitchers of this plant he says: “ I cannot dismiss *Darlingtonia* without pointing out to you what appears to me a most curious point in its history, which is, that the change from the slender, tubular, open mouthed, to the inflated, closed-mouthed pitchers, is absolutely sudden in the individual plant. This, a matter of no little significance in itself, derives additional interest from the fact that the young pitchers, to a certain degree, represent those of the Sarracenias with open mouths and erect lids, and the old pitchers those of the Sarracenias with closed mouths and globose lids, a marvellously significant fact in the view of those morphologists who hold the doctrine of evolution. „

Nepenthes, a genus comprising thirty chiefly tropical species, belongs to the same category. Their pitchers are not transformed leaves as in the Sarracenias, but an appendage of the leaf developed at its tip, and answer to a water-secreting gland that is seen terminating the mid-rib of the leaf of certain plants. The interior of the pitcher presents three principal surfaces; an *attractive*, *conductive* and a *secretive* surface. The detentive surface of the Sarracenia is represented by the fluid secretion, which is here invariably present at all stages of growth of the pitcher.

To test the digestive flowers of *Nepenthes*, Dr Hooker fed the pitchers with white of egg, raw meat, fibrine and cartilage. In all cases, we are told, the action was most evident, in some surprising. After twenty-four hours' immersion the edges of the cubes of white of egg are eaten away and the surfaces gelatinised. Fragments of meat are rapidly reduced, and pieces of fibrine weighing several grains dissolve and totally disappear in two or three days. With cartilage the action is the most remarkable of all; lumps of this weighing 8 and 10 grains are half gelatinised in twenty-four hours, and in three days the whole mass is greatly diminished, and reduced to a clear transparent jelly. In the cases of small pieces of meat, $^1/_4$—2 grains, all seem to be absorbed; but with 8—10 grains of cartilage it is not so, a certain portion disappears, the rest remains as a transparent jelly, and finally becomes putrid, but not until after many days. In the case of cartilage placed in fluid taken from the pitcher it becomes putrid, but not so soon as if placed in distilled water. Insects appear to be acted upon somewhat differently, for after several day's immersion of a large piece of cartilage, Dr Hooker found that a good-sized cockroach which had followed the cartilage and was drowned for his temerity, in two days became putrid. On removing the cockroach the cartilage remained inodorous many days. In this case no doubt, the antiseptic fluid had permeated the tissue of the cartilage, whilst enough did not remain to penetrate the chitinous hard covering of the insect, which consequently decomposed. Comparing the action of fibrine, meat and cartilage placed in tubes of Nepenthes fluid with others in distilled water, it was observed that their disintegration is three times more rapid in the fluid; but this disintegration is wholly different from that effected by immersion in the fluid of the pitcher of the living plant.

It is probable that other *carnivorous* plants exist. Delpino thinks that *Caltha dionæfolia*, Hook. possesses this property; and we might add that *Apocynum androsæmifolium*, large flowers of several Aristolochias, etc., Aroids, etc., probably have similar functions, though less developed. If the action of insects attracted towards flowers by their colours and odours is limited to ensuring their fertilisation, wherefore these hairs and traps on the inner surface on the perianth, which seize and hold them after they are dead?

It is true that other botanists of note, Mr. Duchartre and also Prof. Parlatore, for instance, with whom we had some conversation on this subject recently at Florence, do not accept this new theory, and believe that a wrong interpretation has been put upon these curious facts. Prof. Parlatore thinks that the organs which capture the insects have no other object than the protection of the flower from injury during impregnation. Just as hairs, thorns, spines, down, scales, etc., are defensive organs only, to the objects of which very little attention has hitherto been paid, so are the pitchers with their remarkable arrangements, provisions for the protection of the plant, and especially the inflorescence, from the depredations of insects.

If Dr Hooker's conclusions are not universally accepted they have many adherents, and they will at least serve the purpose, (awaiting the publication of Mr. Darwins new work on the subject), of inducing physiologists of submitting to renewed investigations one of the most curious points in vegetable life.

E. A.

THE MOVEMENT OF WATER IN PLANTS.

Dr Mc. Nab has been experimenting on the movement of water in the stems of plants. His results have recently been published in the *Transactions of the Royal Irish Academy*, 1874. We simply give his deductions :

That under favourable circumstances, a rate of ascent of 40 inches per hour can be obtained.

That, contrary to the generally received opinion, direct experiment has shown that the upward rapid current of water does not cease in the evening.

That checking the transpiration for a short time, by placing the branch in darkness, does not materially retard the rapid current of water.

That the removal of the cortical tissues does not impede the rapid current in the stem which moves only; hrough the wood portion of the fibro-vascular bundles.

That a well-marked rapid flow of fluid will take place in the stem after the removal of the leaves.

The fluid will rapidly flow downwards as well as upwards in the wood portion of the fibro-vascular bundles, as seen in a branch in which lithium solution was applied at the top.

That pressure of mercury does not exert any very marked influence on the rapidity of the flow, in the one experiment made with a pressure of 110-53 grammes of mercury.

FALL AND RENEWAL OF THE LEAF.

In Dr. Ascherson's report on the vegetation of the Lybian Desert, published in the *Botanische Zeitung*, there are some interesting notes on the fall and renewal of the leaves of deciduous trees. In our climate we have little difficulty in understanding the distinction between evergreen and deciduous trees and shrubs, because the greater part of those that change their leaves cast the old ones in autumn or early winter; and evergreens with flat leaves have them more or less coriaceous. But even with us there is a gradual transition from evergreen to deciduous through *Euonymus europaeus* and *Ligustrum vulgare*, both of which have strictly evergreen congeners in *Euonymus japonicus* and *Ligustrum japonicum*. Some few years ago Hoffmann started a theory that sempervirence could be artificially produced, and there is no doubt that climate influences to a great extent the length of the period during which really deciduous species hold their foliage; but it appears far more probable that these are physiological peculiarities not altogether dependent upon climate, as we find evergreen and deciduous species growing in the same regions and under precisely similar conditions. Some evergreens do not change their leaves at all, and even retain them for many years or all their lifetime; *Araucaria imbricata*, for example. *Taxodium distichum*, one of the few deciduous Coniferæ, offers a very curious phenomenon, inasmuch as the ultimate branchlets are deciduous. The observations chronicled by Dr. Ascherson agree almost entirely with our own experience. On his outward journey he traversed 25° of latitude in less than a month, which gave him an excellent opportunity for studying the conditions of the same species under very diverse climates. Thus, for instance, in the plains of Lombardy many deciduous trees, and especially *Morus alba*, were still partially covered with foliage on the 19th of November, the same species having long previously shed their leaves in Germany. In a similar manner, the Fig trees in Lower Egypt (31° N. lat.) were partially clothed with foliage at the beginning of December, and in Upper Egypt (27° N.) were still in full leaf, whilst already, on the 24th of November, they were quite bare in the Apulian Plain (41° N.). On the 11th of December, the Pomegranate trees in the gardens of Siout were in yellow leaf, and on New Year's Day, 1874, the Apricot trees at Farafreh were still in their prime of green leaf. Hence, one might readily imagine that on approaching nearer the equator these same species would exhibit no interval between the fall and the renewal of the foliage, and thus, to all intents and purposes, become evergreen. But this phenomenon was only verified in the case of the little cultivated Peach trees of the oases, in which it may not be constant. Moreover, the Peach tree shows the same tendency in mild seasons with us. In the oases, at the beginning of March, when the trees began to blossom and make new growth, the old leaves were still fresh and capable of assimilation. All other deciduous trees and shrubs cultivated in the gardens of Kasr Dghakel (25° 45′ N. lat.), including the Grape Vine, Apricot, Apple, Pomegranate, Plum, Fig, Mulberry and Willow *(Salix safsaf)*, had lost their foliage on the arrival of Dr. Ascherson, or became leafless before the end of January. It should be mentioned that the fall of the leaf in this region does not proceed with the same regularity as at home, for it is not unusual to see quite naked and fully clothed trees of the same species standing side by side. Again, the presence of abundance of moisture has the effect of enabling the trees to carry their old foliage longer, and put forth their new earlier, than trees growing in drier situations. And some of the Willows growing by water were quite evergreen; that is, after the manner of the Peach trees mentioned above. But the Apricot, one of the most abundant trees, rarely retained even a few scattered old leaves on the appearance of the flowers. The same was observed of the Grape Vine, Fig, and Mulberry. By Feb. 20 the Apricot trees were in full blossom, and by March 10 in full foliage, so that there was only an interval of four or five weeks between the fall of the old foliage and complete development of the new. The Apple and Plum behaved in a similar manner, the Pomegranate was a little later, the Fig next in order, and finally the Mulberry; whilst the same things, in the reverse sense, lost their leaves first. From the preceding notes it seems that the fall and renewal of the leaf is an essential constitutional peculiarity, which is modified by climatic conditions, but not entirely subject to them. A more striking illustration of this fact may be found in exotic deciduous trees planted in Egypt. Dr. Ascherson noted more particularly the summer fall of the leaves of *Poinsettia pulcherrima*, a South American shrub, and *Albizzia lebbek*, a native of the East Indies. The former is in the full splendour of its inflorescence in December, and quite leafless in April, remaining so, it is said, until the autumn. The Albizzia is extensively planted as an avenue tree. It sheds its foliage in April, but soon renews it. Both of these plants lose their leaves in their native countries during the dry, and renew them with the opening of the rainy season. (Extracted from " *Nature* „ Dec. 17, 1874.)

HORTICULTURAL CHRONICLE.

December, 1874.

— Italy and Commerce in Plants. — To guard against the possible introduction of the *Phylloxera* into Italy, the Italian government has issued an order prohibiting the entry of all foreign fruit trees whatsoever into that country. This is an exceedingly vexatious restriction, overshooting the mark altogether, as the *Phylloxera* only attacks the Grape Vine. But we are informed that a concession has been made at the instance of pressing demands, and plants are now permitted to be sent, if accompained by a certificate to the effect that the packages contain no vines and that the *Phylloxera* is not known in the district whence the plants come. The remedy is insufficient, and a simple declaration that the packages contain no vines would answer all needful purposes. We trust that an order so detrimental to nurserymen and others will be reconsidered.

— The Potato Tinea. — The appearance of a fresh Potato scourge has recently been signalised in Algeria. It is a caterpillar, recognised by Mr. Boisduval as a *Tinea*, and probably a new species. This grub eats its way through the tubers, depositing its excrement as it goes, causing them to rot, and affected tubers are rejected even by cattle. Mr. Riviere laid the facts before the *Société centrale d'Horticulture* in August last. Mr. Bossin suggested that the insect might possibly be destroyed, if it does not appear until after the crop is taken up, by placing the Potatoes in a close room and burning flowers of sulphur, the fumes of which will kill the Potato fungus, *Botrytis infestans*.

— Adiantum Farleyense. — This queen of hot-house ferns was represented at the last exhibition at Liverpool by a magnificent specimen due to the skill of Mr. Cromwell, gardener to T. Moss, Esq. It was six feet in diameter, and formed an elegant waving mass of plumes, in the highest degree effective. We, like the editor of the *Journal of Horticulture*, from whom we borrow this item of news, should be glad to receive a few notes from Mr. Cromwell respecting the method of treatment adopted to attain such perfection.

— A wonderful Water Lily. — According to the *Bulletin d'Arboriculture*, Mr. Balansa has recently sent to Mr. Durieu de Maisonneuve, of Bordeaux, seeds of a splendid new aquatic plant, before which even the *Victoria regia* itself must pale. Mr. Linden has also obtained a few seeds, which he will sow in the spring. We await the confirmation of this purported discovery in Paraguay with considerable impatience.

— Index to the Prodromus. — The last part of the Index of De Candolle's *Prodromus* by Mr. Bück is published. Address G. Masson, libraire à Paris, place de l'École de Médecine.

— Professor Meissner's Library. — The immense collection of books brought together by the late Professor of Botany at Basel, Switzerland, is to be sold. Catalogues may be had on application to M. Georg, bookseller, Basel.

— Nardy's establishment at Hyeres. — We learn that Mr. Nardy has founded a horticultural establishment in this town, more especially for seed growing, which is both easy and profitable on account of the exceptionally favourable climatal conditions of the place. The title of the firm is Nardy and C°. " In the interests of science and horticulture, a „ considerable space, we are informed by the circular of „ these gentlemen, will be gratuitously devoted to experi- „ ments in naturalisation of any new plants of which seeds „ may be entrusted to us by botanists, horticulturists, bota- „ nic gardens, agricultural or horticultural societies. The „ history of the progress of all seeds received in this way „ will be regularly forwarded to those interested. „ We know Mr. Nardy sufficiently well to have confidence in the promises that all trials will be conducted with great care and perseverance.

— Prunus sinensis and P. japonica. — In a recent number of the *Revue Horticole* Mr. Carriere seeks to throw some light upon the characteristics of these two species, frequently confounded or incorrectly named in gardens. *P. sinensis* is distinguished by its slender branches having a reddish bark, shortly petiolate lanceolate, scabrous, shortly-toothed leaves from 2 to 3 inches long and about 6 lines broad, flowers in April, flowers 2—3 borne together, pedicellate, sepals oval, reflexed after expansion, petals oval hooded, clawed, distant, white tinged with pink. The fruit which ripens towards the end of August, is spherical, about half an inch in diameter, with a broad shallow suture, umbilicate at the top, flesh tinted, free, of an agreable flavour, stone nearly spherical mucronulate, traversed by three furrows. This plant was sent by Mr. Simon from China to the Botanic Gardens of Paris in 1865. The variety with double flowers has existed there ever since 1852. It should not be confounded with *P. japonica* which differs in well-marked characters, amongst others the fruit is not more than half the size, and it is furnished with an elongated mucro at the top. These two charming shrubs are valuable for the open air, but more particularly for forcing, on account of the profusion and elegance of their handsome double flowers, borne in small clusters all along the branches in early spring.

— Agaves in the open air. — It is not so generally known as it might be that the American Agaves will succeed in the open air of the warmer parts of the kingdom with very slight precautions. Two years ago a fine plant of *Agave Salmiana* which had been standing out of doors several years flowered at le Pecq, near Paris. To protect it from the rigours of winter it was simply housed in with boards. This season, a specimen of *A. americana* has flowered in the garden of Mr. Bouley, also at le Pecq. It has been planted out ever since 1861. The circumference of its foliage was 18 feet and the height of the flower scape about 26 feet.

— New species of Dipterocarpus. — Mr. Vesque published some species of *Dipterocarpus*, the types of which were furnished by Mr. Beccari, in the *Comptes-rendus de l'Académie des Sciences*, (t. 78, pp. 625-627, March 2, 1874); and Professor Thiselton Dyer unfortunately published some

of the same species as new in a revision of the genus, which appeared in the *Journal of Botany* (April, 1874). On the other hand some of Mr. Vesque's species are anticipated by Hooker's *Flora Indica*. In the *Journal of Botany* for May, Prof. Dyer publishes some remarks on the subject, noting which of his species fall to those of Mr. Vesque and *vice-versâ*. There still remains something to be done in this family, for we recently (November 20) brought specimens of several new species, of *Dipterocarpus* from Florence for the Paris *Museum*, which likewise were collected by Beccari. They will be published shortly, as Mr. Beccari himself is engaged in preparing the materials for a general work.

— Obituary. — Mr. Shuttleworth, an English botanist, who has resided in Provence and Switzerland for some years past, has lately died. His library and his dried plants will be sold altogether. For information address M^me^ veuve Shuttleworth à Hyères (Var) France.

It is with sincere regret that we announce the death of John Traherne Moggridge, which occurred at Mentone, November 24. The deceased has been a partial invalid for some years, and obliged to resort to a more genial climate than England during the autumn and winter months. Though a great sufferer, he did not sit down in despair, but forgot his pains in an ardent and intelligent study of the beauties and mysteries presented by the works of nature. His " *Contributions to a Flora of Mentone* „ is a good example of patient research and careful execution; and his investigations into the manners and customs of Harvesting Ants and Trap-door Spiders offer much that is interesting. All who had the pleasure of his acquaintance will long remember him for his purely amiable disposition alone.

E. A. and W. B. H.

ORNAMENTAL GARDENING.

A FLOWERING SUNK-FENCE AT MILAN.

Italy not only offers examples in the art of gardening in the master-pieces of the period of the Medicis, which served as models for C. Mollet and Lenôtre, but its modern gardens are often laid out with great taste. We have collected some notes on this point, which we shall publish from time to time.

At Milan, among other things, we greatly admired the simple and at same time charming manner in which the public park is enclosed with an elegant flowering fence. The accompanying wood-cut will enable our readers to understand the arrangement adopted.

At A is the walk skirting the park, almost on a level with the ground of the public garden within the enclosure. This road-way is planted with an avenue of trees, starting from the statue of Count Cavour in the Via Manin, and bordering a large portion of the lower part of the park.

Instead of fencing in the park with an iron palisade or a wall, both questionable and costly ornaments, a ditch was hollowed out with a retaining wall, and a light iron railing on the out-side, and a slope on the inside.

So far there is nothing out of the ordinary way. The novelty is in the slope, which, instead of being bare turf; is clothed with flowering shrubs, as well as the bottom of the ditch. Here, for instance, is an immense bank of Lilacs which in spring forms a carpet of purple-violet on an emerald green ground, succeeded by clumps of *Hibiscus Syriacus*, various species of *Spiraea*, in hundreds and thousands of individuals forming splendid dwarf groups, away over which we have uninterrupted views of the park scenery. When their heads rise too high, the shears are soon brought into requisition.

It is certainly an excellent idea, whether new or not, matters little. The effect is good, it deserves reproduction, and is sure to please.

E. A.

Etab. Chromo. de C. Stroobant, à Gand.

J. Linden, publ.

PL. CLXXXIX.

SPATHIPHYLLUM HELICONIAEFOLIUM, SCHOTT.

NAT. ORD. AROIDEAE.

ETYMOLOGY : from the Greek σπαθη, spathe, and φυλλον, leaf, in allusion to the foliaceous spathe.

GENERIC CHARACTER : *spatha* foliaris, persistens. *Spadix* pedicellatus, abbreviatus, floribus hermaphroditis obsitus. *Perigonium* penta-octophyllum. *Stamina* 5-8, perigonii foliolis opposita, filamenta lineari-lanceolata, complanata, antherae biloculares. *Ovarium* triloculare. *Ovula* in loculis gemina, collateralia, axi appensa. *Stigma* sessile, trilobum. *Bacca* trilocularis, loculis mono-dispermis. *Ova-* *Semina* albuminosa. — *Herbae americanae tropicae, acaules, foliis oblongis sagittatisve integris, petiolis longis, longe vaginatis, apice geniculatis, spadicibus suaveolentibus.* (Endl. *Gen.* 1703.)

Spathiphyllum, Schott, *Melet.* 22.

SPECIFIC CHARACTER : lamina *folii* oblonga apice breviter acuminata, basi repentino angustata v. rotundata, venis patentissimis leviter adscendentibus, remotiusculis, secundariis costae parum decurrentibus; *spatha* oblongo-ovata pedalis, basi repentino in pedunculum contracta ibique spatio marginis angustissimi crispati ad instar decurrente, apice in acumen cuspidatum longiusculum producta; spadicem digitiformem duplo superante, rhachi 3-4 unciati, pedunculi parte accreta subsesqui-pollicari, libera vix semipollicari, ovariis longe et acutate prominentibus. *Spadix* florens albicans, non fecundatus tandem nigrescens. *Perigonium* hexasepalum, sepala spathulato-cucullata, 3 exteriora interiora lateraliter obtegentia, interdum aestivatione irregulari coordinata, omnia conglutinata v. leviter connexa. *Stamina* brevia, filamenta compressula vix extra sepala emergentia; antherae breviter ellipticae, effetae loculorum marginibus retroflexis sagittatae, ovariis adglutinatae et accrescentibus iis ruptoque convexivo tenui, longe ultra sepala elata. *Ovaria* sepalis duplo longiora ad medium usque obconoidea ibique sensim in cornu attenuata, 3-4 locularia, loculamentis altitudine sepalorum, ovulis 6 in quolibet loculamento, medio axi funiculis longiolis affixis, micropylo fundum versus spectante. *Stigma* discoideum 3-4 lobatum. *Baccae* ovoideae apice in cornu attenuatae, rubentes. *Semina* nephroideo-ovata, albuminosa. *Testa* crassiuscula. *Embryo* axilis. (Schott, *Aroideae*, p. 2, t. 5, 6.) Ad rivos fluminis Peruviensis *Rio-Huallaga*, circa urbem Moyobambam. — 1865. — Ad vir. descr. in h. Lind. — E. A.

Spatiphyllum heliconiaefolium, Schott, *Aroid.*, p. 2.

This beautiful Aroid grows on the banks of the Rio-Huallaga (Peru), near Moyobamba, whence Mr. Linden obtained living plants in 1865.

We took it at first to be a new species, but it approaches so near the *S. heliconiaefolium*, described and figured by Schott, that we feel justified in referring it to that species.

We have here completed the description given by Schott, to whom its native country was unknown.

The other known species of *Spathiphyllum* are from Brazil, Venezuela, Surinam and Mexico. Recently, too, some have been detected in Colombia, which are probably new, and of which we shall have occasion to speak hereafter.

The species in question is the finest of all in regard to the size of its handsome foliage. A glance at the plate opposite will give some idea of its magnificent, deep green, highly lustrous leaves, upwards of a yard long and a foot wide.

E. A.

WINTER DISCOLOURING OF EVERGREENS.

The change in colour to red or brown which many evergreen trees and shrubs undergo in winter has been the subject of investigation of several botanists. Von Mohl determined that this colour did not exclude the presence of chlorophyll, but appeared with it in the form of brown or yellow granules in the juice of the cellular tissue. His experiments were repeated by Mr. G. Kraus, who published the results some time ago [1]. He observed that in *Buxus arborescens* the exposed parts of the leaves assumed a brown colour, especially on the upper surface, with the exception of the folds. The palisade cells contain small granular masses of protoplasm, coloured red-brown or copper-red, and are destitute of chlorophyll. In the underlying layer of cells protoplasm is found of a yellowish or brownish green intermixed with half destroyed granules of chlorophyll, which is also discoloured. In open parenchymatous tissue the granules are intact and dissolved in the protoplasm, which takes a green hue. This fact obtains in all the conifers and is particularly noticeable in *Thuya plicata* and *T. occidentalis*. These phenomena indicate the congelation, not the death of the cell. The process is reversed on the return of warm weather, and the grains of chlorophyll reform. Mr. Askenary has already shown that these changes commence in the parts most exposed to the influence of light and cold, though they may also take place in the dark under the influence of variations in temperature.

While on this subject we may mention the analogous researches of Mr. Bommer who gave the coloured substance the name of *phyllophaioïne* (why not the more simple form *phyllopheine* ?) and supplements his labours with some interesting deductions.

E. A.

[1] Ueber die Winterliche Färbung immergrüner Gewächse, *Botanische Zeitung*, 1872, col. 109—112 and 127—128.

PL. CXC.

DRACAENA (CORDYLINE) DENSICOMA, LINDEN & ANDRÉ.

NAT. ORD. **ASPARAGINEAE.**

For ETYMOLOGY and GENERIC CHARACTER, see *Ill. Hort.* under plate 264.

SPECIFIC CHARACTER: *caulis* arboreus simplex, apice foliosus, annulatus, 3-4 met. altus; *folia* petiolata, lanceolata, utrinque acuminata, apice acuta, basi in petiolum brevem bi-alatum amplexicaulem decurrentia, pergamenea, nervoso-striata, atroviridia, 1^{m} longa, 10-12 cent. lata; *panicula* solitaria nutans, dense ramosa, pedunculo deflexo cylindraceo, bracteato; *bracteae* foliosae, infima longa lineari acuta, caeteris gradatim decrescentibus, supremis acutis; inflorescentia rami primarii divaricata, alterni, remoti, ramulis ultimis spiciformibus, dense floriferis; *flores* subsessiles, in rhachi angulato solitarii, bibracteolati, bracteolis scariosis minutis, acutis, patulis, exteriore subulata, interiore late ovata concava; *perigonii* albi vel extus lilacini tubus 6-fidus, infundibuliformis, 4-5 millim. longus, laciniis dimidio minoribus obtusis patenti reflexis; *stamina* 6 longe exserta, aequilonga, tubo longitudine aequalia, filamentis lineari subulatis albis, antheris lineari-oblongis dorsifixis stramineis; *stylus* antheris longior, *stigma* punctiforme; *bacca* rubra in autumno matura, magnitudine *Pisi sativi*, subsphaerico-trisulca, trilocularis; columna stylina filiformi persistente instructa; *semina* compressa, angulata, nigra, nitida. — In Nova Caledonia prope locos dictos Nouméa, sinus Duperré, Canala, etc. — Legerunt Pancher, 1868-69; Balansa, 1870. — An etiam in insulis vicinis Novae-Hollandiae et Zelandiae, unde in hort. Lind. Gandav. allata? — Ad viv. et ex sic. spec. in h. mus. paris. desc. — E. A.

Cordyline densicoma, Linden et André, *sp. nov.*

After having carefully examined this superb species, and ascertained that nothing resembling it existed in the gardens we were able to visit, we looked over the species approaching it most nearly in general aspect, namely *C. Brasiliensis*, *cannaefolia* and *heliconiaefolia*, from which it differs so strongly that it is unnecessary to particularise the distinctions. Independently of its remarkable habit, we may mention its yearly flowering, and the pendulous character of its panicles. Mr. Houllet showed us a plant in the Botanic Gardens of Paris, which appears to be very closely allied to our species, but it differs in the blade being more strongly decurrent down the petiole, and possibly also in the inflorescence, which we have not seen.

On looking through the New Caledonian herbarium at Paris, containing the collections of Pancher, Vieillard, Balansa and others, we came upon our plant at once, though unnamed; and from these specimens, consisting of leaves flowers and fruits, perfectly agreeing with those of our plant, we drew up the foregoing description. We believe that *C. densicoma* must also be a native of the islands on the coast of Australia whence it was introduced with other plants.

E. A.

MISCELLANEOUS.

CAOUTCHOUC TREES.

The solidified milky juice of certain trees furnishes the caoutchouc of commerce. These trees, says the *Bulletin de la Société centrale d'Horticulture* (1874, p. 462), belong to three families: 1. *Euphorbiaceae*, the genera *Hevea* and *Siphonia*, of which two species, *Hevea guianensis* and *Siphonia elastica*, natives of the Amazon valley, are employed. 2. *Artocarpeae*, which furnishes the *Castilloa elastica*, a native of Central America, from Mexico to Peru, and various species of *Ficus*, found in India, Java and Australia. 3. *Apocyneae*, species of *Hancornia* from S. Brazil, *Landolphia*, equatorial Africa, *Vahea*, Madagascar, and *Urceola*, Borneo and Malacca. The best caoutchouc comes from Para, where the milky juice of *Hevea* is collected during the dry season, from August to February. The incisions are made in the evening, and the juice is collected the next morning. The Ule, *Castilloa* grows in the forests of Central America and its juice is the best in April. A tree 20 inches in diameter produces about 56 pounds of caoutchouc. Its coagulation is effected by the addition of certain vegetable substances, which cause it to solidify in soft brown masses having the odour of new cheese. From 600 to 800 persons are employed at Greytown, Nicaragua, and 2000 near Panama, in the caoutchouc industry. The caoutchouc of Guatemala is of inferior, that of Guayaquil of unequal quality. The Pernambuco caoutchouc, extracted from *Hancornia*, is very good. In Asia, *Ficus elastica*, of India, Java and Sumatra, produces a superior kind of caoutchouc, which is adulterated with *Urceola elastica*, from which the juice is extracted by heat applied to one end of blocks of the wood. In France, an excellent caoutchouc from Madagascar, is greatly used. Equatorial Africa produces trees that yield a kind of caoutchouc, the preparation of which is yet imperfectly understood. The working of this branch of industry is carried on to so great an extent in various parts of the world, and the caoutchouc yielding trees are sacrificed so carelessly that there is great danger of the supply of this valuable substance being exhausted at no very remote period, particularly if some wise precautions are not taken, and new plantations formed.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

P. De Pannemaeker, ad nat. pinx. in [illegible]

L'Illustration Horticole.

J. Linden, publ.

PL. CXCI.

KENTIA (KENTIOPSIS?) BALMOREANA.

NAT. ORD. **PALMACEAE.**

ETYMOLOGY : named after William Kent, a gardener who accompanied the illustrious Reinwardt in his travels in the Indian Archipelago.

GENERIC CHARACTER : *flores* monoici, in eodem spadice fasciculato ramoso, spatha triplici, interiore incompleta cincto, in scrobiculos sessiles, bracteis obsoletis rhachi coalescentibus, masculi bini ad latera feminei. Masc. : *calyx* tripartitus, laciniis non inter se imbricatis. *Corolla* tripetala, petalis in praefloratione valvatis. *Stamina* sex, filamenta ima connata, antherae lineares. *Pistilli* rudimentum. Fem. : *calyx* triphyllus et corolla tripetala dissimilis, praefloratione convoluta. *Staminum* rudimenta nulla vel obsoleta. *Ovarium* uniloculare, ovulo in fundo affixo. *Stigmata* tria distincta subsessilia. *Bacca* parce fibrosa monosperma. *Albumen* solidum aequabile. *Embryo* exacte basilaris. — *Palmae rupestres, caudice elato gracili annulato inermi, frondibus omnibus in summo caudice confertis pinnatisectis, segmentis reduplicatis linearibus pectinato-dependentibus, apice passim inaequali-bifidis, spadicibus infra frondium vaginas elongatas enatis subverticillatis, spathis coriaceis deciduis duplicato-ramosis, ramis fastigiatis, ramulis undique in scrobiculis superficialibus flore uno foemineo minori ac binis masculis majoribus lateralibus colore stramineo obsessis, fructibus parvis, ovoideis vel ellipsoideis ex luteo miniatis, cicatrice stigmatum verticali, endocarpio chartaceo sive membranacco cum nucleo hunc connato.*

Kentia, Blume, *Rumphia*, II, 94.

SPECIFIC CHARACTER :

This is one of three Palms brought from Lord Howe's islands by Mr. J. Moore, director of the Botanic Garden of Sydney, Australia, who was the first to discover them. They were only known to us through the descriptions published in English Catalogues, at the time they were sent out. Thanks to the kindness of Mr. Brongniart we were directed to a recent part of Müller's *Fragmenta phytographiae australiae*, in which the very species in question are noticed. Unfortunately the information is very meagre. He enumerates *Kentia Canterburyana*, *Balmoreana* and *Mooreana*, but gives no exact localities, and limits his description to an examination of the flowers and fruits. So far as our plant is concerned, he gives no reference to the work in which it was first described, merely quoting the *Report on the Brisbane Botanic Garden*, 1874 for the other two species. According to Müller, who does not describe its mode of growth, this species has a large, branched inflorescence, 3 to 5 feet long, borne on a common peduncle eighteen inches long; and its flowers are like those of *K. Forsteriana*, except that the males have from 50 to 70 stamens. This character would bring it into the genus *Kentiopsis* of Brongniart, which includes some of the largest Palms of N. Caledonia.

Until we receive more complete information respecting this plant, we must consider it a *Kentiopsis*, awaiting which, we must defer a description, as young specimens are inadequate.

From a horticultural point of view this is a very fine and effective ornamental species. E. A.

THE GIANT NETTLE.

English horticultural journals are occupied at the present time with a large Australian tree, known under the name of Giant Nettle (*Laportea gigas*, Wedd.) the stinging properties of which are in direct proportion to its size. At the time the horticultural establishment of the city of Paris at La Muette was under our direction, one of our men was pricked by the hairs of a *Laportea gigas*, which we cultivated for the beauty of its foliage. His arm swelled almost instantaneously. In the evening he was prostate on his bed suffering from a raging fever, which lasted three or four days. He felt pains in the wounded part for some time afterwards.

In Cassell's *Illustrated Travels* we find some additional information on this subject, contributed by a traveller in Australia. When the tree is shaken it scatters short silvery hairs which cause extreme irritation of the skin and nostrils. If touched they cause a violent sting which is felt for months, accompanied by pains in the shoulders and arm-pits, where small boils are formed. For a long time afterwards the pain returns when water is applied to the injured part.

This terrible " Stinging Tree „ yields small pink berries which are very tempting in appearance, and indeed wholesome to eat; but their is great risk of being wounded in gathering them. Horses passing through scrub where bushes of *Laportea* grow frequently die from the stings of this formidable plant, the members stung gradually becoming paralysed, whilst large cattle, bullocks for instance, do not receive the slightest injury.

Laportea gigas, Wedd. (*Urtica gigas*, Gaud.) is a handsome tree from 90 to 100 feet high, but more frequently shrubby, with handsome petiolate, cordate-ovate leaves, often above a foot long and nearly as broad, especially when young. It grows abundantly in eastern Australia in large shady forests from the river Clarence to the borders of the Illawarra district. Cunningham, Leichardt, Verreaux and F. Müller have successively discovered it, and Weddell has given a representation of its trunk from the sketches of another explorer, Mr. Macarthur.

GERMINATION OF LILIES.

Mr. Duchartre has recently published a memoir on the germination and the original formation of the bulbs of various species of *Lilium* in the *Bulletin de la Société centrale d'Horticulture de France*. It fills 28 octavo pages, and is accompained by explanatory illustrations. Seven species come under observation, namely, *Lilium giganteum*, Wall., *L. cordifolium*, *L. auratum*, *L. Szovitzianum*, *L. callosum*, *L. tenuifolium* and *L. Thunbergianum*. The investigations were completed only in the case of *L. giganteum*, in which Mr. Duchartre was able to follow every stage of its early development.

Firstly, *L. giganteum*, Wall., in this species the bulb begins to form soon after germination from the thickened cotyledonary sheath. At the beginning of the second year the primary axis disappears, and the first heart-shaped leaf is formed, each succeeding leaf augmenting the size of the bulb by its thickened basal part.

Secondly, *L. cordifolium*, Thunb., allied to the foregoing, differs in its primary evolution, the original axis persists through the second season, and no adventitious rootlets are formed during the first growth. The subsequent development is the same as in the preceding.

Thirdly, *L. auratum*, Lindl., produces perfect green leaves at first and does not form any nourishing scales during either the first or second growth.

Fourthly, *L. Szovitzianum*, Fisch. and Lall., was only examinated in the second growth. The radicular portion had disappeared and the plant drew its nourishment through adventitions rootlets. There was only one green leaf. It differs in all its characters from *L. auratum*, and approaches the two preceding species.

Fifthly, *L. carnosum*, Zucc., comes near *L. cordifolium*. The radicular portion remains during the second season and the axis develops the bulb being built up by the alternate formation of scales and leaves.

Sixthly, *L. tenuifolium*, Fisch., forms its bulb without the aid of nourishing scales, from the cotyledonary sheath.

Seventhly, *L. Thunbergianum*, Roem. & Schult., produces normal leaves at an early stage and no primary scales, its bulb being formed as in the last named species.

It will thus be seen that the different species (still very restricted in number) examined by Mr. Duchartre, exhibit various modes of growth and development. It is the intention oft this gentleman to follow up his studies in this direction, and for this purpose he appeals to amateurs of Lilies for their assistance in the way of germinating seeds, or plantlets in an early stage of development.

E. A.

THE KITCHEN GARDEN AND ORCHARD.

THE DAICON OR JAPANESE RADISH.

Mr. Leon Lille, seed-merchant, of Lyons, whom we had the pleasure of meeting in September last at the Lyons Horticultural Society's show, is sending out a new Japanese vegetable. It is the Japanese Radish or *Daïcon*, a culinary plant cultivated on a large scale in all parts of Japan where rivers are wanting. It appears that its roots ofte n reach nearly a yard in length and a foot in diameter. Those grown by Mr. Lille attained only about half this size, but that is something considerable. The colour is a milky white tinged with yellow, the very thin skin is easily removed, and the compact, juicy flesh has the delicate flavour of our best small radishes. This plant may be sown after the wheat harvest up to the middle of August; and before the winter sets in it will furnish an abundant crop of green fodder. Its roots are not only useful in the kitchen, but they may also be grown on a large scale as food for cattle.

Mr. L. Sisley, who obtained seeds of the Daïcon from Dr Henon, states in an article in the *Cultivateur Lyonnais*, that another esteemed variety, the Satsuma Radish, has not yet been introduced but deserves to be. In Japan they are prepared for the table in various ways: baked, sliced very thin in salads, or preserved in salt. In the latter form it is used to season boiled rice.

Mr. Lille is sending out his plant under the name of *Raphanus acanthiformis*.

LIGNO-METALLIC FRUIT-STANDS.

Looking over grapes suspended by strings is always a long and tiresome job; but with the revolving stand they may be examined and the bad ones removed with the greatest ease in a sitting position. Each stage, and each branch to which the bunches are attached passes in its turn before the eyes, and within the reach of the operator. All difficulties in cleaning the shelves are overcome. It is never an easy task to remove thoroughly the patches left by partially decayed fruit on wooden shelves, and it frequently happens that it is imperfectly done, and thus the germs of decomposition ave conveyed direct to the next lot of fruit stored. Another objection to boards is the freedom with which they absorb moisture. The wired wooden shelves are exposed to the light; the air circulates freely through them, and the cleansing of the apparatus, if not altogether superfluous, is so exceedingly easy that it is no longer a labour of necessity. Finally, in this stand, as in the fruit-stage, each bunch or each fruit may be examined and turned without moving or rubbing the others. Every housekeeper who is mindful of the appearance of her fruit-room and attaches some value to the preservation of the products of the garden, will adopt this ligno-metallic fruit-stand, which is as useful in its way as a bottle-rack in a well-ordered cellar.

Messrs. André and Fleury are the inventors of this apparatus which is sold at a very moderate price at 9, rue de Sablonville, Neuilly, Seine.

CULTURE OF EUCHARIS AMAZONICA.

This admirable plant is not so widely diffused as it deserves to be. We have often deplored this, especially as we have often seen superb specimens covered with flowers in England, shewing what proper treatment will do. At the International Exhibition of Kensington in 1866, we remember seeing three immense specimens of great beauty. Above their large, lustrous green, handsome leaves, rose fifty, or perhaps more, scapes each bearing several charming, pure white, pendulous flowers, ornamented with an elegant corona.

Mr. Linden, who was the first to discover and introduce the plant, from Columbia never saw it attain such perfection of beauty in its native country.

The comparative rarity of *Eucharis* must be attributed to faulty culture; and we therefore reproduce an article by Mr. Pocock which appeared some time ago in the *Journal of Horticulture*, conducted by our esteemed colleague Dr. Hogg (1).

Eucharis amazonica is one of the most beautiful flowering plants we can grow, either for table decoration, for making bouquets, or for ladies' head-dresses. The following is the method to pursue in its culture.

In the middle of February, when my plants have done flowering, I repot them, if they need it. The compost used is a mixture of light, rotten turves and rich leaf mould, in equal proportions, with a third part of thoroughly decomposed cow-dung and a little silver sand. The components should be well mixed, and if possible, a few pieces of charcoal added. I begin by placing some of the larger sods upon the pot-sherds used for drainage, and fill the pot about half full of mould. Then take five good, healthy bulbs, placing one in the centre and four at equal distances around the circumference, fill the pot up to the rim with mould, and press the latter down pretty firmly. Place the pots in an airy part of the stove, and give a little lukewarm water. If a good, brisk bottom heat, so musch the better.

Leave them here till about the beginning of May, and them remove them to a temperate house, keeping them rather dry and giving them the full benefit of the sun.

At the beginning of June transfer them again to the stove, and gradually increase the supply of water. Treated thus they are almost certain to begin to show their flower-scapes about this period. Then is the time, but not before, to apply liquid manure.

After flowering, allow the plants to remain in the stove until about the middle of August, then take them back to the temperate house again, exposing them fully to the sun for six weeks, when they may again be transferred to the stove for the winter-flowering, about Christmas. It is said that some gardeners keep the *Eucharis* in flower all the year. I do not promise so much, neither do I believe it to be practicable.

To summarise, the most important points are:

1. Thoroughly mix the various ingredients of the compost.
2. Do not employ too large pots. The plants flower better when the roots fill and cover the inside of the pot.
3. Place a little sphagnum on the sherds to insure perfect drainage.
4. After potting do not begin watering until growth has commenced.
5. Expose the plants to the sun, as directed.
6. Do not give liquid manure before the flower-scapes begin to show themselves, and do not banish the plants to some corner after they have flowered.

(1) Not having the *Journal of Horticulture* at hand I am obliged to translate Mr. André's translation back into English, hence it may differ in wording if not in sense. W. B. H.

EXHIBITION OF FRUITS AT GHENT.

On the 18th of October last there was a show of Fruits at Ghent, organised by the *Cercle d'Arboriculture*, which surpassed in quantity and quality all similar exhibitions held in that town. There were 27 classes, most of which were strongly represented. The magnificent Pears of Mr. Van den Houtten, of Ath, the Apples of Mr. Hage, of Courtray, the Pears of Messrs. Hordebise and Monville, of Val-Benoît, Liége, and those of Mr. Capeinick, attracted universal admiration. Mr. L. Pycke, of Courtray, also sent a very instructive collection, all his fruits being accompained by labels indicating their origin, date of introduction, and quality.

We pass by a great number of names worthy of mention in order to tarry an instant before the new or rare fruits staged by Mr. de Biseau, of Hauteville, a raiser favourably known from his Pear *Joséphine de Binche*. His new acquisition of this year is dedicated to the fortunate raiser *Xavier Grégoire*, and we trust that it will prove worthy of the object. We shall speak of this new fruit again, as at present we know nothing of it beyond its fine size and rich colour.

NOXIOUS INSECTS.

The Pear Chermes. — This insect known to every gardener, belongs to the genus *Psylla*. Its power of reproduction is something prodigious, and hitherto no means of destroying it except by scraping the bark and washing the leaves one by one, was known. In the *Bulletin de la Sarthe* of this year we read of a simpler and more effectual way of getting rid of this pest. Put one kilogramme (about 2 1/4 lbs.) of carbonate of potass into seven gallons of water, and wash the wood over when dry in December or January, and a second time in February, and if the trees are old, a third time in March. A few days afterwards apply a warm, much diluted, solution of glue, which will coagulate and suffocate the insects. We are assured that this is an infallible remedy, and we recommend our readers to give it a trial, as we intend to ourselves in our own orchard.

LITERATURE.

Conspectus generum et subgenerum Bromeliacearum germine supero aut seminifero praeditarum, etc. — Append. 4 in indice sem. Horti Berolinensi, 1873. — Review of the Bromeliaceae with a superior ovary, etc., by Prof. K. Koch.

We have recently received the above-named work from the pen of the Berlin Professor.

Prof. Koch examines four tribes of the Bromeliaceae. The first, *Tillandsieae*, includes eight genera, etc., he divides the true Tillandsias into eight sections, but in doing so we think he unites genera which would be better kept separate. These sections are : *Strepsis*, Nutt.; *Diaphoranthema*, Beer; *Eriophorum*, *Phytarrhiza*, Vis.; *Cyathophora, Synandra, Macrocyathus*, *Pityrophyllum*, Beer. — The genera are *Catopsis*, Gris; *Caraguata*, Lindl.; *Guzmannia*, R. and P.; *Anaplophytum*, Beer; *Platystachys*, Koch; *Vriesea*, Lindl.; and *Bonapartea*, R. and P.

The second tribe, the *Pitcairnieae*, comprises two genera besides the *Pitcairnia* containing five sections: *Neumannia Lamprococcus*, *Maydifolia*, *Armigera*, and *Inermis*. We observe that Prof. Koch refers Brongniart's genus *Neumannia* back to *Pitcairnia* whilst he excludes or overlooks the same author's genus *Pepinia* to which our *P. aphelandraeflora* belongs. The other two genera of this tribe are : *Orthopetalum*, Beer, and *Cochliopetalum*, Beer.

The third tribe, *Pourretieae*, contains five genera : *Pourretia*, R. and P.; *Puya*, Mol.; *Encholirion*, Mart.; *Garrelia*, Gaud., and *Dyckia*, Schult. fil.

The fourth tribe also comprises five genera : *Coltendorfia*, Schult. fil.; *Navia*, Schult. fil.; *Brocchinia*, Schult. fil.; *Prionophyllum*, Koch; and *Hechtia*, Kl. (non Zucc.).

At the end of this monograph of genera, to which we cannot here give the critical examination it demands, the author reviews the species of *Dyckia* to the number of eight, namely: *D. sulphurea*, Koch, *D. rariflora*, Schult. fil., *D. remotiflora*, Otto and Dietr., *D. gigantea*, Lindl., *D. montevidensis*, Koch, *D. Catharinensis*, Koch, *D. densiflora*, Schult. fil., and *D. dissitiflora*, Schult. fil.

This is followed by descriptions of some new or differently limited species as : *Platystachys latifolia* (*Tillandsia latifolia*, Meyen.), *P. Ehrenbergii*, Koch. and *P. patens*, Willd., *Encholirion corallinum* and *Saundersii*, described by us (under the names of *Tillandsia corallina* and *Saundersii*), *Vriesea Glaziouana*, Lem. going to *T. gigantea*, Martius; *T. setacea*, Sw., *T. Selloa*, Koch and *Prionophyllum Selloum*, Koch.

We reserve for another occasion an examination of the reasons which have induced to alter the names and relative positions of several genera, we strongly doubt whether his classification will be accepted by all botanists.

E. A.

Pomariae by Th. Wenzig (*Linnœa*, 1874, pp. 1-206. — The designation *Pomariae* employed here by Mr. Wenzig was proposed by Lindley. The German writer thinks it desirable to retain this group as an independent family, following in this respect Bartling, Endlicher, Ledebour, Koch, and Grenier and Godron. He does not accept Koch's ideas, nor those of Regel, who follows Koch (*Dendrologie*) in his revision of the genus *Crataegus (Revisio Crataegorum)*. Independently of the exclusion of a few genera that should not be referred to this family, the author, following the example of Tournefort, refers *Crataegus* to *Mespilus*, and *Pyracantha* to *Cotoneaster*. Moreover he makes a new genus (*Phalacros)* for *Crataegus cordata*. The genus *Pyrus* includes six species : *P. communis*, L. (to which he refers *P. cordata*, Desf.); *P. nivalis*, Jacq. (comprising *P. salvifolia*, DC. *P. sinaica*, Thouin. *P. canescens*, Spach., and *P. elaeagnifolia*, Hort.); *P. amygdaliformis*, Vill. (including *P. parviflora*, Desf., *P. oblongifolia*, Spach., *P. salicifolia*, Lois., *nivalis*, Lindl., *eriopleura*, Reichb. and *P. cuneifolia*, Guss.); *P. elaeagnifolia*, Poll. (including *P. salicifolia*, Hasl. *P. nivalis*, Poll. and *P. orientalis*, Hornem.); *P. syriaca*, Boiss. (comprising *P. glabra*, Boiss. and *P. Boveana*, Dcne.); *P. salicifolia*, Lin. fil. Mr. Wenzing considers the *P. indica*, Colebr., to be a *Crataegus*. *Malus* he makes a section of *Pyrus*, and refers to it *P. betulaefolia*, Bunge, and *P. longifolia*, Coss. and Dur., regarded by Decaisne as races of *P. communis*. *Mespilus* comprises 21, *Cotoneaster* 17 species.

Altogether Mr. Wenzig's memoir runs counter to the ideas embodied in previous monographs of the *Pomaceae*, by Messrs. Decaisne, Regel, Koch, and others, whose divisions he strongly attacks. We do not pretend to decide one way or the other from our cursory examination, but merely notice the work, leaving the author to the criticisms of those who have made a special study of the group in question.

PRODROMUS FLORAE HISPANICAE. — The first part of the third volume of this work, edited by Messrs. Willkomm and Lange, is now ready. It contains 240 octavo pages.

CULTURE DES ARBRES FRUITIERS POUR LA GRANDE PRODUCTION. — Mr. Ch. Baltet has just published a second edition of his pamphlet on Fruit-trees cultivated for market purposes. It is a little work that was welcomed by growers on its first appearance, and from its concise and practical form deserves to be widely spread. Preceded by some general considerations on the management of fruit-growing on a large scale, we have separate chapters treating of the Apricot, Cherry, Peach, Pear, Apple, Plum and Vine, followed by instructions respecting gathering and packing of fruits. The chapter devoted to Pears is the most remarkable. Here he enters into the whole question of culture, selection of varieties, distances between the trees, preparation of the soil, planting, pruning, renewal, etc. To give a fair analysis of this memoir, we should have to quote it almost in full. We prefer recommending its purchase, which from its modest price of one franc is within the reach of all.

NOTICE SUR LES LIS, by Mr. Krelage. — We have received the first number of a memoir on the Lilies from our esteemed correspondent, which we should have noticed long ago, had we not preferred waiting for the second part, and entering into a fuller consideration of the subject. This work is the same appeared in the Dutch *Tuinbouw Illustratie* of the same author, and was translated by our friend Mr. Rodigas. This part treats more particularly of *Lilium Wittei*, *Thunbergianum*, *tigrinum*, *auratum*, *Humboldtii*, and *speciosum*. It may be had of Mr. J. H. Krelage, Haarlem, Holland.

E. A.

INDEX

TO

VOLUME XXI (VOL. I, NEW SERIES) OF THE ILLUSTRATION HORTICOLE.

COULOURED PLATES AND TEXT.

Pl.		Pages.
159	Anthurium floribundum	21-22
164	Aphelandra Fascinator	39-40
175	Azalea Marshal Mac-Mahon	107-108
171	„ Madame Gloner	83-84
173	„ Marquis Corsi	103-104
158	Camellia Don Pedro	7-8
185	„ Miss Minnie Merritt	151-152
168	„ Pietro Boutourlin	69-70
166	Carludovica imperialis	55-56
178	Cattleya gigas	119-120
157	Ceroxylon andicola	5-6
188	Clavija Rodekiana	169-170
163	Cordyline bellula	37-38
190	„ densicoma	183-184
183	Cypripedium Schlimii, *var.* albiflorum	137-138
172	Dendrobium infundibulum	85-86
167	Dieffenbachia lancifolia	57-58
181	Dracaena (*Cordyline*) Casanovae	135-136
187	„ „ Troubetzkoi	167-168
162	Epidendrum Catillus	35-36
186	Fourcroya Lindeni	165-166
176	Galeandra Devoniana	109-110
169	Geonoma gracilis	71-72
191	Kentia (*Kentiopsis ?*) Balmoreana	185-186
160	Lasiandra lepidota	23-24
174	Livistona Hoogendorpii	105-106
180	Masdevallia Trochilus.	133-134
170	Odontoglossum brevifolium	73-74
156	Oncidium fuscatum.	3-4
165	„ sarcodes	53-54
161	Pritchardia pacifica	25-26
177	Ronnbergia Morreniana	117-118
182	Sciadocalyx × Luciani.	147-148
189	Spathiphyllum heliconiaefolium	181-182
184	Theophrasta (?) imperialis	149-150
179	Tillandsia tessellata	121-122

WOODCUTS.

Breadfruit tree (*Artocarpus incisa*) 29
Cajophora coronata. 43
Cinerarias, double-flowered 27
Pear de Lacroix 9
Summer House of rustic ironwork. 11

Abies Douglasii Stairii 56
Acclimatization, Essay on 9
Adiantum Farleyense 177
Agaves in the open air 178
Alocasia hybrida Gaulainii 132
Amaryllis procera, culture of 47
„ procera, flowering of 2
André, Mr., distinction awarded to 82
Anthurium floribundum 21
„ Scherzerianum Williamsii 68
Aphelandra Fascinator 39
Araucarias at Bicton 121
Avocado Pear 45
Awards, distribution of to the successful exhibitors at Vienna. 20
Azalea Madame Gloner 83
„ Marquis Corsi. 103
„ Marshall Mac Mahon 107
Azaleas, at Lake Como 107

Bamboos 19, 159
Baobab the 65
Beech tree, a remarkable 130
Begonias, new tuberous 139
Begonia Emile Lesueur 164
Begoniella 73

BIBLIOGRAPHY.

Conspectus generum et subgenerum Bromeliacearum, etc. . . 191
Culture des arbres fruitiers pour la grande production 191
De Tuinbouw Illustratie. 100
Dictionnaire de Pomologie 61
Engravings of the Bon Jardinier. 146
Le Fraisier, Strawberry. 16
L'Empire du Brésil à l'Exposition de Vienne 33
Notice sur les Lis 191
Pomariae 191
Prodromus Flora Hispaniae. 191
Réflexions sur les ouvrages généraux de Botanique 47

Boldu, the 18
Boronias, culture of 111
Botanical Congress at Florence 153
Botanic Garden of St. Petersburgh 79
Botanical Gardens, etc., list of 49
Botanical libraries in Belgium 38
Botanical Publication, a new 2
Breadfruit tree 29
Bureau, prof. 33

Camellia Don Pedro 7
„ Pietro Boutourlin 69
„ Miss Minnie Merritt 151
Camellias grafting in the open air 107
„ selection of the most beautiful 7
Candollean quinquennial prize. 33
Canna iridiflora 49, 114
„ Madame Chrétien 132
Cannas 53
Caoutchouc trees 183
Carludovica imperialis 55
Carnauba, the 35
Carnivorous Plants. 171
Casuarina sumatrana 133

Pages.

Cattleya gigas . . . 119
Cattleya gigas in England . . . 167
Cedron, the . . . 17
Ceroxylon andicola. . . . 5
Chrysanthemums in the Temple gardens . . . 132
Cinerarias, double-flowered. . . . 27
Classification of plants . . . 99
Clavija Rodekiana . . . 169
Club, Horticultural . . . 163
Cocos Weddelliana, flowering of . . . 1
Congress of Rose Growers . . . 131
Conifers, relative hardiness of. . . . 41
Correction, A. . . . 17
Crystal Palace at Liverpool . . . 82
Cucumber Duke of Edinburgh. . . . 167
Cut Flowers, preservation of . . . 21
Cypripedium Schlimi var. albiflorum . . . 137
Cyrenaica, expedition in . . . 33

Daicon, the . . . 187
Date Plums . . . 139
Dendrobium infundibulum . . . 85
Dieffenbachia lancifolia . . . 57
Dipterocarpus, new species of . . . 178
Dracaena (Cordyline) bellula . . . 37
„ „ Casanovae . . . 135
„ „ densicoma . . . 183
„ „ Troubetzkoi . . . 167
Dried plants, exchange of . . . 99

Elaeocarpi, New-Caledonian . . . 13
Embellishment of Gardens . . . 147
English Horticultural journals, changes in . . . 1
Epidendrum Catillus . . . 35
Eranthemums, three new . . . 162
Eriocaulon, flowering of. . . . 100
Erythrina Parcellii. . . . 162
Eucalyptus, cultivation of . . . 37
„ insect. . . . 51
Eucharis Amazonica, culture of . . . 189
Evergreens, discoloration of in Winter . . . 181
Exhibitions, Belgian . . . 20
„ Brussels. . . . 111
„ England, in 1875 . . . 130
„ Florence International . . 7, 45, 49, 65, 68, 85, 97
„ Ghent . . . 33, 189
„ Holland, in 1875 . . . 161
„ Horticultural Society of London . . . 141
„ Liége. . . . 113
„ Liverpool . . . 165
„ Lyons . . . 113, 133
„ Manchester. . . . 51
„ Paris . . . 169
„ Regent's Park . . . 20
Exotic fruits in Covent Garden . . . 1
Exploration of Tunis . . . 114

Fall and renewal of the leaf . . . 175
Flora Brasiliensis . . . 114
Flora of San Remo . . . 115
Flowering retarded . . . 146
Flowers, colours of . . . 59
Fourcroya Lindeni. . . . 165
Frosts, effects of late on vegetation . . . 66, 97
Fruiting, rare cases of . . . 98
Fruit-Stands. . . . 187
Fruit modelling in Italy . . . 99

Pages.

Fruits admitted by the French Pomological Congress. . . . 3
„ admitted by the Pomological Congress at Vienna, 1873. 71
„ new of 1873 . . . 41

Galeandra Devoniana . . . 109
Garden walks . . . 157
Geonoma gracilis . . . 71
Germination of Lilies. . . . 187
Gladioluses, new of 1874 . . . 79
Grapes extraordinary . . . 129
Grasses for shade places. . . . 131
Guaco, the . . . 17

Hausmannia jucunda . . . 43
Hausmannia jucunda, flowering of . . . 2
Hooker, Dr. President of the Royal Society of London . . . 33

Index to the Prodromus . . . 177
Insect-destroyers of Cucurbitaceae . . . 129
Insects, noxious . . . 189

Jalap, flowering of . . . 146

Kentia Balmoreana. . . . 185

Labels . . . 98
Lacquer, Chinese and Japanese . . . 61
Lasiandra lepidota. . . . 23
Letters, unpublished . . . 100
Lilies, germination of . . . 187
Lilium auratum with double flowers . . . 65
Linden's establishment on Lake major. . . . 162
Livistona Hoogendorpii . . . 105, 117

Masdevallias, new . . . 52
Masdevallia Harryana. . . . 81
„ Lindeni . . . 81
„ Trochilus . . . 133
Medinilla magnifica . . . 163
Melons, new. . . . 137
Melon louse . . . 119
Movement of water in plants . . . 175

Nardy's establishment at Hyères . . . 177
Nettle, the giant . . . 185
Nettles, temporary harmlessness of. . . . 66

Obituary.

Mr. Booth . . . 102
Cordier . . . 102
Fée . . . 102
Guérin-Meneville. . . . 20
Hooker . . . 163
Janin. . . . 102
Moggridge . . . 180
Salter . . . 101
Shuttleworth . . . 179

Odontoglossum brevifolium . . . 73
Oncidium fuscatum . . . 3
„ sarcodes . . . 53
Orange trees, a new methode of propagating. . . . 105
„ „ diseases of in Algeria . . . 132
Orchids, sales of . . . 2, 51, 162
Oreopanax, propagation of . . . 77
Oxera pulchella. . . . 159

Palms of New Caledonia . . . 7
Paraguay, exploration of . . . 33
Pasteur, Mr., national reward to. . . . 114
Phormium, variegated . . . 42

Pages.

Phylloxera, and American Grape vines 109
„ destruction of 19, 77, 113, 130, 177
„ in Austria and Switzerland 145
„ treatment of vines infested with 75
Pitcairnia Andreana 17
Pear grafting on the Mountain Ash 145
Pear, new, de Lacroix 9
Pear Abbé Fétel 137
Pears, Californian 67
Pelargoniums, double-flowered zonale 57
Pelargonium Society 145, 161
Plants, carnivorous 171
„ commerce in 177
„ movement of water in 175
„ new 55
„ new or rare 103
„ photographs of 115
Poisoning by Puffballs and by Snails 1, 66
Polar Expedition 145
Pomological Congress, seventeenth session of the French . . 135
Potato Beetle of Colorado 57
„ Tinea, the 177
Pritchardia grandis 70
„ pacifica 25
Prunus japonica 178
„ sinensis 178
Puccinia malvacearum 67

Radish, the Japanese 187
Rapatea pandanoides 49
Rhipsalis Houlletii 50
Rhone irregation canal 67
Ronnbergia Morreniana 117
Rose hedges 77

Pages.

Rose Judging 143
Roses, new 1874 151
School of Horticulture at Versailles 81
Sciadocalyx × Luciani 147
Seeds, Duration of the gernimating pover of 27
Siebold, monument to 162
Spathiphyllum heliconiaefolium 181
Spermacoce (?) hispida 65
Strawberries, new 149
Summer House, rustic 11
Sunk fence 180

Tenthredos, ravages of 129
Theophrasta (?) imperialis 52, 83, 149
Tillandsia tessellata 121
Tomato, Carter's Green gage 151
Torreya myristica, fruiting of 101
Tropical fruits 81
Tulipa, the genus 17

Vanilla sheap 162
Vegetables, new 41
Vegetable physiology 114
Villa Vigier. Nice 123
Vines, protection of from frost 129

Water Lily, a wonderful 177
Wax-Palm, the Brazilian 35
Wellingtonia, seeding of 131
Weeping trees 153
Wine of the Isabella Grape 20
Wines, exhibition of in London in 1874 19
Woolhope Fungus club 163

Xanthoceras sorbifolia 18

TCOMET AL VAN DER HAGHEN.

THE

ILLUSTRATION HORTICOLE.

GHENT (BELGIUM). — PRINTED BY EUGÈNE VANDERHAEGHEN,
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THE

ILLUSTRATION HORTICOLE

AN

ILLUSTRATED MONTHLY REVIEW

OF

NEW AND INTERESTING PLANTS

WITH THEIR DESCRIPTIONS, HISTORY AND CULTURE.

PUBLISHED AND CONDUCTED BY

J. LINDEN,

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« HANDBOOK OF HARDY TREES, SHRUBS, AND HERBACEOUS PLANTS » etc.

AND BY NUMEROUS AMATEUR AND PROFESSIONAL CORRESPONDENTS.

VOL. II. — NEW SERIES.

NEW AND RARE PLANTS,
THEIR CULTURE,
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FLORICULTURE.

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KITCHEN GARDEN.

BOTANY.

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ORNAMENTS
AND
IMPLEMENTS
FOR
GARDENS AND PARKS.

HORTICULTURAL LITERATURE
AND
POETRY.

CORRESPONDENCE.

GHENT *(Belgium)*.

1875.

HORTICULTURAL CHRONICLE.

January, 1875.

— Exploration of New Caledonia. — During the past year Mr. J. Linden sent out two travellers to New Caledonia, under the moral protection of the French Government, for the purpose of collecting plants interesting either from a horticultural or botanical point of view. They have safely reached their destination and commenced active operations. Indeed, the first consignments are expected to reach Europe before long. The expedition, consisting of a French botanical collector well known from his numerous discoveries in New Caledonia, and a young Belgian gardener, who has for a long time been employed in Mr. Linden's establishment, has been organised under the most favourable circumstances, and the most sanguine hopes of success are entertained. The flora of New Caledonia is extremely rich in endemic species, and particularly so in Palms, Ferns, Conifers and numerous other families; and it has often been a matter of regret that so few of the plants of this country were known in a living state in Europe. Fortunately the blank will soon be filled up, and this expedition may be expected to render valuable services both to botany and horticulture.

The investigation of the vegetable products of New Caledonia will be followed up by the exploration of the Fidji Islands (Viti) the New Hebrides and Solomon Isles, New Guinea and the Indian Archipelago, and we have great expectations of the results of this voyage, which has been undertaken at Mr. Linden's sole cost, and we shall very shortly have occasion to speak of it more in detail.

— The genus Curmeria. — When we founded this new genus *(Illust. Hort.* 1873, p. 45), we only knew with certainty one species, the type, *C. picturata*, though we remarked that the plant known in commerce as *Homalonema Wendlandi* should probably form a second species under the name of *C. Wendlandi.* A third species has recently come to light. It was described and figured by Dr. Masters in the Gardeners' Chronicle, December, 1874, p. 804-805, under the name of *C. Roezlii.* This plant was discovered in Colombia by Mr. Roezl. It is of an uniform olive-green tint, with longer petioles than in our plant, besides other characters by which it is readily distinguished.

— Erythrophyll developed in the dark. — On looking over our dried specimens of *Curmeria picturata* in connection with the species just mentioned, we were at once struck with the appearance of a leaf which was quite green when placed between paper to dry, but had since changed to a deep arterial blood red of the most decided and rich hue. The experiments of several physiologists had previously proved that *erythrophyll,* or the red colouring matter of autumn foliage, which renders some of our trees so gay for a short time before the frost disrobes them, can be developed in the dark. But we are not acquainted with any other example of so striking a nature as the instance we relate, and we submit it to the consideration of those specially interested in the question.

— The Gardener's Yearbook. — For some years past our esteemed friend, Dr. Hogg, has annually published his Yearbook, a horticultural annual similar to the Belgian work noticed below. It has become an indispensable adjunct to the most modest of gardeners' libraries.

Monograph of the Durioneae. — Dr. Maxwell Masters presented a monograph of this peculiar group at the second meeting of the present session of the Linnean Society. This work comprises all the genera and species of the tribe, including the recent discoveries of Mr. Beccari in Borneo.

— Insectivorous and Climbing Plants. — We learn that Mr. Darwin has a new work in the press which is to bear the preceding title. The contents will be treated as follows: — Part I. On the sensitiveness of the leaves of *Drosera*, *Dionaea*, *Pinguicula*, etc., to certain stimulants; and on their power of digesting and absorbing certain animal matter. Part 2. On the habits and movements of climbing plants. Mr. Murray is the publisher.

Hardiness of Lapageria rosea. — Our contemporary *The Garden* gives an excellent cut in a late number of this attractive plant, reproduced from a photograph of a fine specimen in the open air in Lucombe Nurseries, Exeter. In sheltered situations in any part of the South and West of England this beautiful climber will flourish and flower more profusely often than when under glass, and if well mulched at the root in winter it is rarely injured.

— Winter-garden of the King of the Belgians. — We learn that the King of the Belgians intends to have a large circular conservatory constructed in his park at Laeken. Its dimensions will be about 200 feet long by 65 in height; and Mr. Balat is the architect. The iron-work will be furnished by the forges of Willebroeck.

— The International Geographical Congress. — From the *Academy* we learn that the meeting announced to take place in Paris at Easter has been postponed till July 1875, in consequence of the numerous applications for space at the Geographical Exhibition, and which have consequently led to the necessity of securing a larger building than had at first been thought necessary. The exhibition will, it is announced, be held in the *Palais de l'Industrie*, or in a building to be erected specially for the purpose; and will include plan, maps, charts, drawings and books referring to geographical subjects, as well as instruments and machinery, and useful products of foreign countries, together which objects of European industry. The Commission appointed to organise the entire scheme have in contemplation to publish a journal of commercial geography, for which they have solicited contributions. Information may be obtained at the Commissariat général, 10, boulevard de la Tour-Maubourg, Paris.

— Annuaire de l'Horticulture Belge. — This volume, which we announced some time ago, has just appeared. It is a compendium of commercial horticulture, and will be very serviceable not only in Belgium, but also in other countries. The authors are Messrs. Burvenich, Ed. Pynaert,

Em. Rodigas and H. J. Van Hulle, all professors at the Ghent School of Horticulture. It may be obtained at the Bureau de l'Annuaire, 4 boulevard du Château, à Gand. The price is two francs.

In addition to a detailed list of Belgian horticulturists and cognate professions, desirable new plants (too brief a review, perhaps), new fruits, it contains a quantity of miscellaneous matter, such as recipes, cultural notes, new and little known implements, landscape, and kitchen gardens, etc., etc.; and it is embellished with 44 illustrations and a portrait of Mr. Ghellinck de Walle, president of the *Cercle d'Arboriculture.*

— Les Plantes ornementales. — We have seen the second volume of this work, begun last year for by Messrs Cogniaux and Marchal, Mr. Dallière, of Ghent, assisted and we intend taking it up again for a careful perusal and review.

— Consignments of Conifers from Mr. Roezl. — This celebrated and energetic traveller, who traverses the New World with such extraordinary rapidity as to appear to possess the power of ubiquity, has forwarded quite a cargo of coniferous seeds to his friend Mr. Ortgies, of Zurich, which will be the means of distributing many new and rare species. The collection contains: *Abies lasiocarpa*, Lindl.; *A. magnifica*, Murr.; *A, magnifica*, var. *macrocarpa*, Roezl; *Pinus Lambertiana*, Douglas; all from the Sierra Nevada of California. From the Rocky Mountains, Colorado, he has sent: *Abies concolor*, Engelmann; *A. concolor violacea*, Roezl.; *A. bifolia*, Murray; *A. Douglasii*, Lindl.; *A. Douglasii glauca*, Roezl.; *Picea commutata Parlatorei*, Roezl; *Pinus aristata*, Engelm.; *Pinus flexilis*, James; and *P. reflexa*, Torrey. He has also sent seeds of *Yucca angustifolia*, Pursh; *Opuntia arborescens*, Engelm., and *O. Camanchica*, Engelm. and Bigel. We strongly suspect, however, that the latter plant is nothing more than *O. vulgaris*, Mill., notwithstanding the statements of botanists to the contrary.

— Obituary. — Comte Jaubert, a deputy in the National Assembly of France, a member of the Institute of France and a distinguished botanist, died at Montpellier in December last. He was born in 1798, and occupied some of the highest posts in his country. He was Minister for Public Works under Louis-Philippe, and a free member of the Academy of Sciences. It was owing to his liberality that Mr. Boreau was able to publish his *Flore du centre de la France*, which has since reached its third edition. In conjunction with Spach, Jaubert published under the title *Illustrationes Plantarum orientalium* five magnificent folio volumes, containing coloured plates and descriptions of five hundred species of plants collected by himself on his travels in the East. Comte Jaubert pleaded the cause of science in the Assembly and advanced it in every way in his power. Moreover, we mourn in him the loss of an excellent and fatherly friend.

Ed. André.

PL. CXCII.

DIEFFENBACHIA ANTIOQUIENSIS, LINDEN ET ANDRÉ.

Nat. Ord. AROIDEAE.

For ETYMOLOGY and GENERIC CHARACTER, see *Ill. Hort.*, 1874, plate 167.

SPECIFIC CHARACTER: *caulis* erectus, robustus, simplex, succulentus, *D. imperialis* habitu, cylindraceus annulatus; *folia* assurgentia petiolo erecto vix amplexicauli 35-40 cent. longo, subtereti, superne libero gracili, e basi usque ad medium vaginato vaginae marginibus convolutis, apice biaurito ligulato; fol. lamina erecta elliptica basi subcordata apice acuta, plana, marginibus paululum undulato-subdecurvatis, longe mucronata, costa supra haud elevata, infra prominente, nervis subparallelis immersis, subtus pallida, supra nitide-viridis maculis permultis *geographicis* primum luteolis mox viridi-luteis elegantissimis tota superficie conspersa; *flores*.... — E provincia Antioquiae Novo-Granatensium in hort. Linden. allata, 1872. — Ad viv. descr. — E. A.

Dieffenbachia Antioquiensis, Linden et André, *sp. nov.*

This showy species belongs to the same group as *D. imperialis*, having an erect tree-like habit of growth. It is a native of New Grenada, growing in the province of Antioquia, and we have named it after the delightful region of which it is an ornament.

Although less robust in habit than *D. imperialis*, it has a stout, firm stem, bearing a crown of erect leaves, with elegant, relatively slender petioles, the convolute sheath of which extends to only half their length.

The blade of the leaf is elliptical in outline, rounded at the base and abruptly terminating in a long channeled mucro. It is elegantly though irregularly sprinkled over with yellow blotches, eventually changing to a yellowish green, and with well defined outlines in the adult leaves.

It is a charming plant, and was greatly admired in Mr. Linden's group of New Plants at the late international exhibition at Florence.

E. A.

DIEFFENBACHIA ANTIOQUENSIS LIND. et AND.

...annemaeker, ad nat. pinx. in Horto Lind. — J. Linden, sc.

AZALEA INDICA MADAME JEAN WOLKOFF (Et. Lind)

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

THRINAX BARBADENSIS, Lodd.

L Streobant , Gand

Linden

PL. CXCIII.

AZALEA MADAME JEAN WOLKOFF.

NAT. ORD. ERICEAE.

For ETYMOLOGY and GENERIC CHARACTER, see *Ill. Hort.*, 1874, under plate 171.

CHARACTER OF THE VARIETY : — We have dedicated this pretty new variety to the wife of a very skilful amateur, Mr. Jean Wolkoff from Moscou, whose plant-houses are remarkably well filled. It is distinguished by the extraordinary size of its flower-clusters. The flowers are semi-double, unusually large, of a delicate pearly texture, and of a pure white, striped near the margin with more or less vivid carmine lines. The elegant contour of the heart-shaped, clawed petals with auriculate lobes is very striking in this remarkable novelty, which will take a place in the first rank. E. A.

PL. CXCIV.

THRINAX BARBADENSIS, LODDIGES.

NAT. ORD. PALMEAE.

ETYMOLOGY : Θριναξ a trident or winnowing fan, probably in allusion to the form of the leaves.

GENERIC CHARACTER : *flores* hermaphroditi, in spadice alterne et duplicato-ramoso, spathis pluribus incompletis cincto, breviter pedicellati, bracteati. *Calyx* profunde sexfidus. *Corolla* nulla. *Stamina* 6-12; filamenta subulata, basi connata, antherae oblongae, utrinque bifidae, erectae. *Ovarium* e carpidio unico, uniovulato. *Stylus* sursum in *stigma* concavum tubuloso-ampliatus. *Bacca* monosperma. *Albumen* aequabile aut subruminatum. *Embryo* subverticalis v. dorsalis. — *Palmae antillanae, caudice mediocri, tenui, frondibus terminalibus, palmato-flabelliformibus, petiolorum basibus vaginantibus in reticulum solutis, floribus minimis* (ENDL. *Gen.* 1762).

Thrinax, Linn. fil. in Schreb. *Gen.*

SPECIFIC CHARACTER : *caudex* mediocris aut subelatus; *folii* lamina digitato-multipartita laciniis lanceolatis, acuminatis, crassiusculis, trinerviis, ligula viridi, obliterata, nervis furfuraceo-lepidoto-fuscis, ... (*Caetera desiderantur*). — LODD. in Kunth, *Enum.* III, 254.

Thrinax Barbadensis, Lodd. Kunth, *Enum.* III. 251 Mart. 257, N° 6.

This handsome Palm is a native of the Antilles, especially of Barbadoes, and is extremely rare in European gardens. The specimens may be counted; we only know of three, with the exception of the young plants kindly sent over to Mr. Linden by His Excellency Major General Monro, Governor of the Barbados.

A very fine specimen which we lately saw in Mr. Linden's establishment at Ghent, forms a plant from 10 to 12 feet high, with enormous fanshaped leaves. The green petioles marbled all over with silvery white blotches, are rounded below, channelled above, bearded with a thick felt of small, white scales, intermixed with short, black, hooked, ascending spines. The radiating, though not orbicular, limb is of a lively green, slightly powdered, with very prominent ribs, and majesticaly borne on the top of the petiole.

There is, therefore, now the possibility of its soon becoming widely dispersed in our tropical conservatories, in the form of young healthy specimens, well deserving their reputation.

E. A.

MY EX-COLLECTOR WALLIS.

Mr. Gustav Wallis has published some statements, and alleges certain grievances in the *Gardeners' Chronicle*, and also in the *Hamburger Garten- und Blumenzeiting* and in the *Gartenflora*, which I cannot allow to pass uncontradicted. The writer styles himself a botanical traveller, although I have never obtained from him a single dried specimen in the interest of science. He complains that I no longer mention his name in the *Illustration Horticole*, and takes the opportunity of advancing the most extravagant claims. As Wallis has himself thought fit to lift the veil which I had permitted to conceal his conduct, I think it my duty now to set forth his behaviour in its true light. What I have to say may be a lesson to others, who, like myself, may have the unfortunate weakness to put too high the services of their *employés*, and to raise them on a pedestal and fill them, as in this case, with the most ridiculous self-conceit. Wallis went to Brazil as an assistant gardener. After dragging on an unhappy existence there for several years, he besought my assistance. I listened to his entreaty, and shortly afterwards took him into my service as collector. This was probably the happiest moment of his live, for, far from having sacrificed eight years to my interests, as he now affirms, his admission into my service was, on the contrary, a piece of good fortune, which saved him from poverty and assured him a career. I found him poor, unknown and forsaken; and he left me with a name, a small fortune, a museum of curiosities of all sorts (formed in his native town in Germany by numerous consignments during his voyages) and honours, obtained through my influence, such as a collector never before enjoyed. As he was a novice in his calling I guided him step by step; and from my own experience and from my exact instructions, he travelled from the mouths of the Amazon to the other side of the Isthmus of Panama. This journey cost me upwards of £ 5000. The expenses of crossing Peru and Ecuador were enormous, and the returns were insignificant, in consequence of the bad state in which the plants arrived. Apart from several introductions which made more noise than profit, the journey remained unproductive until New Grenada — the classic ground of the genera *Odontoglossum* and *Masdevallia*, many of which were discovered by myself — was reached. Following my directions a collector might have refound them — in a manner of speaking — blindfolded. Moreover, this voyage had not the slightest scientific pretentions. It was simply a commercial enterprise, undertaken for the purpose of supplying the wants of my establishment. The idea, its accomplishment, and the results belonged to me alone. Regardless of the name or quality of the agent, I had the right, if I chose, to omit all mention of his name and of the habitats of the plants — a course which the most elementary knowledge of commercial prudence would have dictated, in order to avoid competition. English importers of plants act in a similar manner, and let those who would blame them remember what has happened in Wallis' case. In fact, if, instead of making him known by all the means in my power, associating his name with the plants received and obtaining medals for him at the exhibitions, I had left him in the obscurity from which unassisted he would never have emerged, he would not have had the chance of selling to others the experience which he gained through my teaching and at my cost. I deny most positively the right of Mr. Wallis to speak of the plants which he has been commissioned to collect for me, or of the localities in which they were found. In carrying out a commercial mission for me and at my expense, he would only have done his duty, as any one else would have done; but how stands the case? Inflated with self-importance, Wallis deserted me once; but after an absence of two years, I was so imprudent as to take him into my service again, imagining that a remorseful conscience brought him back again to me, and for this act I experienced the most sorry recompense. Continuing to mention his name after such proceedings would be simply to reward ingratitude and encourage defection. I disdainfully decline to criticise the false pretensions of Mr. Wallis concerning the introduction of *Cattleya gigas* and *Curmeria picturata;* but, desirous to render to Cæsar the things that are Cæsar's, I declare that it is not true that these plants were introduced by Wallis, but that their first introduction to my stoves is due to Mr. Roezl. Had Mr. Wallis succeeded in introducing the plants, mentioned by his claims, would it have been necessary for me to go to the expense of a second expedition for the purpose? With regard to the part that Wallis claims to have played in my service, it is scarcely necessary for me to mention that, after more than ten years scientific travels, carried out at the order of the Belgian Government, I have since employed myself during thirty years in the organisation of expeditions in different parts of the world, and during that long period I have had from eight to ten collectors, as well, and some better known, thanks to me, than Wallis. My chief introductions were made long before I knew him. *Odontoglossums* and *Masdevallias* flourished in my houses ten years before they became fashionable with amateurs, yet none of my collectors made the ridiculous pretentions raised by Wallis. If such absurd claims were admitted, there is no reason why each and all of my gardeners should not urge similar claims. Collectors, both before and after Wallis, have never failed me. Other expeditions are at the present moment in course of execution, and there is no cause to suppose that the services of my actual travellers will be less than those rendered by a man who, in return for numerous kindnesses, has shown towards me the greatest ingratitude and bad feeling.

J. L.

HORTICULTURAL CHRONICLE.

February, 1875.

— Canna iridiflora. — The appeal made by us to possessors of this beautiful plant, which has become so exceedingly rare in collections, has been, we are told, crowned with success. Amateurs desirous of procuring it, among others Messrs. Sisley and de Lambertye, should communicate with Mr. Müller, the curator of the Botanic Garden at Strasbourg, who will doubtless gratify their wish. For our part in the matter, we only request one of those gentlemen to furnish us with a sucker of the plant when either of them shall have propagated it.

— Masdevallia chimaera. — A figure of this curious species from the pencil of Mr. W. G. Smith recently appeared in the *Gardeners' Chronicle* (1875, p. 111), together with a brief history of it by the same gentleman. Whe shall shortly have occasion to speak of this plant again, a specimen of it having flowered in Mr. Linden's establishment, from which a new plate has been prepared for a future number of the *Illustration Horticole*. With the plate we shall publish further details of this and an allied form.

— List of vegetable Oils and Fats. — A second edition of this useful little book, for which we are indebted to Mr. Bernardin, the energetic conservator of the museum at Melle, Belgium, has lately appeared. It will be of great service in the manufactures, in commerce and in the arts. It may be had at Mr. Muquardt's, library, Brussels.

— Horticultural club in London. — We have previously announced the efforts of certain horticulturists and amateurs to found a club in London, and we believe the only cause of delay in starting is the difficulty experienced in finding suitable quarters. It is to be hoped that it will be so organised as to have something of an international character, which would doubtless increase its chances of success and prove mutually advantageous to ourselves and to our foreign colleagues.

— Fuchsias. — In the *Gardeners' Chronicle*, (1875, p. 179), we have published some preliminary notes on this attractive genus of plants with a view to completing, as far as possible, our knowledge of the horticultural history of this genus. We take the opportunity here also of requesting those interested in the matter and in possession of trustworthy knowledge or record of the origin of the early garden-varieties, to favour us with such information. Fresh specimens of newly introduced species, and some of the older varieties are very desirable. Our appeal has already resulted in the publication and private communication of some missing links in the history of these interesting plants. Letters and specimens may be addressed to Mr. W. B. Hemsley, Herbarium, Kew.

— Evening Lectures at the Royal Horticultural Society's Rooms, South Kensington. — A new feature in the winter programme of this society is a series of lectures on horticultural and cognate subjects. On Feb. 3, the Rev. M. J. Berkeley treated of " Fungi, the Causes of Disease Real or Supposed. „ It would take up more space than we have at our disposal here to give even a brief summary of this instructive lecture. But, as the learned gentleman observed, much remains to be done in this branch of research. Speaking of what is termed sappy meat, he described it as consisting of a number of little vesicles filled with very minute particles, which present the Brownian motion, and which Mr. Berkeley suggested, from their known effects on meat, might possibly be the cause of cholera, hospital gangrene, or other diseases.

— Exhibition at Philadelphia in 1876. — This great American exhibition is beginning to occupy attention. In a number of the *American Agriculturist* for December, 1874, there is a plan and a view of the Crystal Palace and surrounding grounds to be devoted to horticulture in this gigantic centenary exhibition. The large conservatory is of colossal proportions. It measures 310 feet long by 160 feet broad, forming an enormous winter garden in the centre. The sides are occupied with hot-houses, greenhouses, offices, refreshment rooms, etc. The whole has been constructed from the designs of Mr. Schwarzmann, under the direction of the National Society of Horticulture. The surrounding grounds will be laid out as a park, and planted with the various vegetable products of the vast territory of the United States, which will give some idea of the richness and variety of the flora of this great country. The planting is to be completed this year. Four hundred and fifty acres of land have been set aside for Agricultural experiments. From the magnificent scale of the preparations and the activity displayed by the " Centennial Commission „ we may hope to see a fine exhibition at Philadelphia in 1876.

— Wellingtonia gigantea pendula. — In the *Gardeners' Chronicle* of this year, p. 50, there is a notice of a form of *Wellingtonia* growing at Chatsworth, for which the name of *pendula* is proposed. This variety is not new. It has been noticed in the *Revue Horticole*, and was sent out in November 1870, by Mr. Paillet, nurseryman at Chatenay, near Paris.

— Medal of Honour to M. A. De Candolle. — The Federation of the Belgian Horticultural Societies has decided to offer a bronze medal to this illustrious botanist in the name of Belgian Horticulture, to commemorate the completion of the *Prodromus*. Everbody will applaud the intended distinction.

— De Candolle's quinquennial prize. — This prize, instituted by A. Pyramus De Candolle, has been awarded to Mr. Radlkofer of Munich, for his monograph of *Sapindus*.

— Delessert's Herbarium. — This fine collection, which went from Paris to Geneva, is now in the hands of Mr. J. Müller, who has been appointed chief curator. It will be rearranged, and its numerous treasures opened to botanists.

— Obituary. — Mr. Hohenacker died at Kirckheim, Wurtemburg, in November last. He will be remembered for his *Herbarium normale plantarum officinalium*, and some good work on Caucasian plants.

E. A. and W. B. H.

PL. CXCV.

ZAMIA LINDENI, REGEL.

NAT. ORD. CYCADEAE.

ÉTYMOLOGY. — From Zamia, hurt, damage, probably in reference to the prickly nature of some species.

GENERIC CHARACTER : *Flores masculi;* Antherae apertae, in strobilos terminales, pedunculatos collectae, undique rhachi communi insertae, singulae ovoideae, basi in stipitem attenuatae, apice incrassato-peltiformi, subbilobae, lobis subtus polliniferis. *Flores feminei :* Carpidia plurima, monophylla, aperta, in strobilos terminales, pedunculatos collectae, rhachi communi undique insertae, singula basi in stipitem attenuata, apice in peltam hexagonam dilatata, peltâ subtus utrinque ovulo unico, inverso foeta. *Fructus* e carpidiis subdiscretis. *Semina* ovoideo-subglobosa, testa ossea, epidermide tenuiter carnosa, cincta. *Embryo* inversus, in axi albuminis carnosi, radicula respectu rhacheos communis centripeta. — *Arbusculae in America tropica, imprimis in Indiae occidentalis insulis obviae, frondibus pinnatis, pinnis basi calloso-constrictis, multinerviis, nervis simplicibus, indivisis.* Ex Endlicher *Gen. Plant.* 706.

SPECIFIC CHARACTER : *truncus* cylindricus, metr. plurim. altus, robustus, foliis delapsis cicatrisatus, squamis cuneato peltatis rufis copertus; *folia* basi vaginis ovato-cuneatis acutis dorso carinatis membranaceo-chartaceis intermixta, *petioli* 2 metr. et ultra longi, cylindracei, lana fulva sparsim vestiti, aculeati, aculeolis conicis brevibus cum caudice rectangulis, albis; *foliola* glabra v. vix puberula, utrinque 40 et ultra, subopposita (ultima deficiente aut abortivo), sessilia, longe lanceolata, 0^{m},20 longa, 0^{m},003-4 lata, subfalcata, plana nitide-viridia, centro inter sulcos 2 laterales latos elevato, marginibus a medio ad apicem dentato serratis (dentibus raris aculeatis), nervis filiformibus subparallelis circiter 20 supra distinctissimis; *strobili....* — E sylvis Ecuadorensibus in hort. Linden. a cl. Roezl allata, anno 1874. — Ad viv. descr. — E. A.

Zamia Lindeni, Regel. mss. — An publice jam descripta?

This handsome Cycad, discovered by Mr. Roezl in the Republic of Ecuador, and sent to Mr. Linden last year, increases in beauty, from week to week, as it approaches towards the perfect development of its foliage. The first leaves that we saw last summer could give us no idea of those since formed, which are more than six feet long, with from 40 to 44 pairs of leaflets. This and *Zamia Roezli* (*Ill. Hort.* 1873, p. 126) are the finest Cycads of recent introduction. Its nearest ally is the *Z. Baraquiniana* of gardens, but the trunk of the latter species is smooth and whitish, its leaves are not woolly and they are of less vigorous and shorter growth. Further, its native country is Brazil, far removed from the home of our plant from the shores of the Pacific; and there are several other differences in the minor details of the two species.

Zamia Lindeni was named by Dr Regel, but we have not yet been able to ascertain whether he has published it or not, and therefore we must give it as a manuscript name until we have obtained fuller information.

E. A.

ZAMIA LINDENI, Regel.

...De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

Etab: Chromo. de L. Stroobant, à Gand

MASDEVALLIA AMABILIS Reichb. fil. var. LINEATA.

J. Linden, publ.

PL. CXCVI.

MASDEVALLIA AMABILIS, REICHB. FIL. VAR. LINEATA.

NAT. ORD. ORCHIDEAE.

ETYMOLOGY and GENERIC CHARACTER : see *Ill. Hort.*, under plate CLXXV.

SPECIFIC CHARACTER : *folia* obovato oblonga obtusa emarginata 12 cent. longa, medio 15 mill. lata, petiolo longo subtereti canaliculato basi vagina pellucida truncata arcte cincto; *pedunculus* uniflorus, gracilis, teres, 15-20 cent. altus, bi-bracteatus, *bracteis* vaginantibus albis scariosis truncato-acutis, infima supra medium inserta, suprema ovario pedicellato sulcato breviore; *calycis* infundibuliformis tubus e basi ampliatus arcuatus mento brevi rotundato lateraliter compressus, superne luteolus, subtus albido-roseus, rubro-lineatus; *limbi* trilobi (extus pallidi, intus nitide aurantiaco-roseï marginibus internis roseis, venis 3 vivide purpureis) lobus superior late triangulus in appendice filiformi erecta lutea abrupte attenuatus, 2 inferiores latiores oblique ovati externe decurvati usque ad medium connati dein liberi in caudas duas lineares conniventes luteas quam appendicem superiorem breviores producti; e *petalis* 3 in tubo latentibus 2 *lateralia* oblonga dolabriformia alba apice unicuspidata violacea marginibus inaequalibus, unus teres, alter alatus gladiatus, basi lata (videtur calcarata), *labellum* subpanduratum 5 mill. longum apice linguiformi apiculato marginibusque atroviolaceis; *gynostemium* petiolis brevius, canaliculatum, album linea violacea utrinque marginatum, ala cucullata brevi hyalina apice auctum.

In Peruvia septentrionali legit cl. Roezl, 1872. Ad viv. flor. desc. in hort. Lind.

Masdevallia amabilis (Rchb. f. *Bonpl.* II, 116), var. **lineata**. Lind. et And.

A native of the high plateaus of Peru, originally discovered by Warscewicz, and subsequently, about two years since, by Roezl, who introduced living plants into Europe of the variety with striped flowers of which we here give a portrait.

Its determination was by no means easy and satisfactory, and we had some doubts of its identity with the *M. amabilis* of Reichenbach and Warscewicz. Independently of slight discrepancies in the size of the organs of vegetation, which are of course subject to considerable variation, we could not make the plant which recently flowered at Mr. Linden's agree in all particulars with the description published in the *Bonplandia* and in Walpers *Annales*.

In the first place the perianth-tube of our plant increases in size from the base, and not from the middle only, and it is not half the length of the sepals; the flowers are far more than a third the size of *M. rosea*, Lindl.; the lateral sepals are not twice as broad as the upper one; the sepals are not waved, but merely notched and ligulate at the summit; the cucullate appendage of the androclinium is entire and not toothed; finally, the vague reference to the colour (*pulchre purpurea*) by Dr Reichenbach would lead us to suppose that he had only dried specimens under examination, if the name of Warscewicz were not associated with his, and who says the flowers are of a pleasing uniform red.

Now, nothing is less uniform than the colouring of the flowers of our plant. The perianth-tube is orange red above, and white tinged with pink beneath as well as the under surface of the sepals, whilst their upper surface presents an elegant blending of several tints. The ground colour is a bright pink, blended with orange towards the centre; the whole surface sparkling with silvery spangles when the light plays upon it. The inner margin of the inferior lobes is carmine lake, each lobe being traversed longitudinally by three bright purple lines, which join at the top like the nerves of a melastomaceous leaf.

These three brilliant furrows are characteristic, but we do not consider them of sufficient importance to create a new species, and therefore we refer our plant to *M. amabilis*, of which it may be regarded as the variety *lineata* for the present.

We may observe here that the mixture of the two colours carmine and orange, constitutes a remarkable connecting link of the colours of *M. Lindeni* and *M. ignea*. It is one of the many delights afforded us by the genus *Masdevallia*, which is ever increasing in favour, and of which we shall often have to speak again.

E. A.

Pl. CXCVII.

ARAUCARIA BALANSAE, AD. BRONGN. & GRIS.

NAT. ORD. CONIFERA.

ETYMOLOGY : The typical species of the genus is so called after the *Araucanos* territory by the Chilians.

GENERIC CHARACTER : *flores* dioici vel raro monoici. *Masculi :* amenta terminalia, solitaria v. gemina, cylindracea v. ovali aut oblongo-cylindracea, basi perulis cincta aut nuda. *Bracteae* plurimae arcte imbricatae, axi insertae, inferne angustatae et fere stipitatae, apice ovatae v. subrhombeae et sursum versae, subtus antheriferae. *Antherae* 6-plures, duplici serie dispositae, uniloculares, loculo lineari postice longitudinaliter dehiscente. *Feminei :* amenta terminalia, solitaria, ovoidea, basi nuda vel foliis supremis saepe longioribus annuli ad instar cincta. *Squamae* plurimae, spiraliter dispositae, dense imbricatae, e bractea coriacea basi alata vel aptera, apice appendiculata et lepidio tenui, breviore, totidem vel maxima parte adnato compositae. *Ovarium* solitarium, inversum, basi adnatum, ovatum vel oblongum. *Stylus* brevis. *Stigma* orbiculare, pervium. *Strobilus* magnus, suglobosus, ovatus vel elliptico-globosus, basi nudus vel foliis supremis involucratus, secundo anno maturescens. *Squamae* plurimae, lignescentes, densissime imbricatae, ab axi solvendæ, saepissime steriles, paucae fertiles, e bractea crassa et lepidio bractea angustiore et breviore, tenui, totidem adnato vel apice tantum libero compositae, cuneatae, apterae vel late alatae, apice incrassatae, apophysi subrhombea, carina transversa acuta saepe notata et appendiculata, appendicula longiuscula acuminata recurva. *Nuculae* solitariae, inversae, obovato-oblongae, squamis adnatis, apice libero. *Pericarpium* coriaceum. *Embryo* cylindraceus, in axi albuminis carnosi ejusdem fere longitudine; cotyledonibus 2, integris vel profunde bipartitis unde videntur 4, semiteretibus, hypogeis v. epigeis; radicula cylindracea, infera. — *Arbores excelsae, pyramidatae, resinosae, in America australi et in insulis Melanesiae tropicis vel subtropicis crescentes, sylvas vastas constituentes. Rami 5-plures verticillati, fere horizontales vel subpenduli aut apice adscendentes, verticillis remotis vel remotiusculis. Folia spiraliter disposita, coriacea, nunc plana, nunc compresso-tetragona, in ramis ramulisque sterilibus et florigeris difformia, mucronata et saepe pungentia. Nuculae interdum edules.* — Charact. ex Parlatore in DC. *Prodr.* XVI, 2, 369.)

Araucaria, Juss. *Gen. Pl.* 413. **Dombeya**, Lam. *Ill.* t. 828. **Columbea** et **Eutassa**, Salisb. **Altingia**, Don. **Araucaria** et **Eutacta**, Link.

SPECIFIC CHARACTER : *arbor* excelsa, 40-50 m. alta; *ramuli* adulti distichi, adscendentes; *folia* arboris adultae in ramulis *speciminis* feminei imbricata, squamiformia, 4-5 mill. longa, 2 $^1/_2$ mill. lata, arcuata vel arcuato-uncinata, ovato-triangularia, medio utrinque carinata, itaque subtetragona, basi obliqua, subrhomboidali inserta, punctulis albis multiseriatis conspersa; *amenta mascula* cylindrico-conica, paulum arcuata 3-5 cent. longa, 1 $^1/_2$ cent. lata, basi bracteis imbricatis involucrata, inferioribus minoribus ovatis, superioribus 5 mill. longis lanceolato-triangularibus, stamina arcte imbricata connectivo 2 $^1/_2$ mill. longa triangulari, acuto crasso nitido, paulum arcuato, lobi polliniferi decem, his patentibus breviter mucronulatis, illis concavis apice paulo cucullatis; *ramus strobiliferus* rigidus, ramis sterillibus immixtus, crassior, 4-5 cent. longus, foliis squamiformibus distantibus, triangularibus subplanis, applicatis; *strobilus* elliptico globosus, 10-11 cent. longus. 7-8 cent. latus; squamae obovato-cuneatae, 3 cent. longae lataeque, parte superiore coriacea, semi-roduntata externe convexa sicutque transverse carinata nitida incrassatae, in appendicem triangularem acutam vix incurvam vel rectam, 3 mill. longam productae, lateraliter in alam scariosam fulvam, fragilem, 1 cent. latam expansae, medio inflatae; squamula triangularis, apice tantum libera, margine subtiliter fimbriata. Habitat in silvis Novae-Caledoniae, altitudine 500 m. (Balansa, N° 2511). (Desc. ex Brong. et Gris.) — Vidi viv. in hort. Lind. Gandav. — E. A.

Araucaria Balansae, Brongniart et Gris, in N[lles] *Arch. du Museum*, Mém. T. VII, 3, 206, pl. 13.

According to Mr. Balansa, the discoverer of this splendid tree, it attains a height of 130 to 160 feet. He found it growing at an altitude of about 1500 feet, in the forests on the south-west table-land of Unio, Cape Bocage, and on the volcanic hills of Duperré Bay, New Caledonia. It has the habit of the well known *Araucaria excelsa*, which, however, it appears to exceed in beauty, and the rich purple-brown of the upper side of the branches of the plants we saw at Mr. Linden's, render it peculiarly elegant. The leaves are imbricated all around the distichous, simple branchlets, which are pendulous at the tips. They are scaly, not exceeding a quarter of an inch in length, ascending, curved, triangular, slightly obtuse, somewhat tetragonous and four-furrowed. Messrs. Brongniart and Gris describe the male cones as 1½ to 2 inches long. The staminal connective bears 10 anther lobes, of which the inner are concave and slightly hooded at the top; it is about a tenth of an inch long, triangular, curved, shining and coriaceous. The appendage surmounting the scale of the cone is triangular, almost straight and about an eighth of an inch long.

This fine species has at length been introduced in a living state and is now in Mr. Linden's collection; it will probably be followed by other new and curious Conifers from the same region, so rich in vegetable wonders. The first plant imported was exhibited at Florence, in 1874, under the provisional name of *A. Neo-Caledonica.* A closer examination has enabled us to identify it with the species bearing the name under which we figure it. Our plate represents the habit of a young plant in Mr. Linden's possession, and the analytical details are copied from Mr. Cuisin's beautiful plate executed for the *Nouvelles Archives du Museum.*

E. A.

ARAUCARIA BALANSÆ, Ad. Brong. & Gris.

P. De Pannemaeker, ad nat. pinx. in Horto Lind. J. Linden, publ.

HORTICULTURAL CHRONICLE.

March, 1875.

— Masdevallia amabilis lineata. — The coloured portrait of this plant that appeared in our last number exhibits some inaccuracies in the tints, which we hasten to point out. It is exceedingly difficult, if not absolutely impossible, to render the extremely delicate pink ground, suffused with orange, of our plant; and it is not the artist who is in fault, but the resources of chromolithography are simply unequal to the task of reproducing the scintillating hummingbird-like colours of which we endeavoured to give an idea in our description.

— A New Medicinal Plant. — Mr. Minard, an engineer in Luzon, one of the Philippine Islands, has brought to Paris the seeds of a convolvulaceous plant, which enjoys a great reputation among the Tagals as a medecine of extraordinary virtues. Professor Bureau of the Paris museum believes it to be new to science, and has it under examination.

— The Phylloxera. — We learn that Mr. Louis Portier of Ferrière Cercier, Rhone, thinks he has found the long-sought remedy. It consists in growing tobacco plants between the vines. The green foliage drives away the winged fertile insect; and when the plants are about 18 inches high they are pulled up and buried in the soil, which their narcotic properties pervade and thus destroy the insect. Let it be registered and tried.

— A Botanic garden at Chicago. — The great City of the North American prairies is to have its botanic garden. It will comprise a botanic garden proper, an arboretum, a garden devoted to general floriculture, a botanic museum and library, and an herbarium. Professor H. H. Babcock has been appointed director, and the organisation of the establishment, we are informed, is to be based upon the same plan that is in operation at Kew.

— New double-flowered Pelargoniums. — Florists are actively engaged upon this class of flowers, and improvement is rapid. Mr. Lemoine, of Nancy, raised the following varieties in 1874: *Emile Lemoine, Fille d'honneur, Guillion Mangilli, Lucie Lemoine, Madame Thibaut, Richard Lavias,* and *Venus*. Mr. Alegatière of Lyons, who is in connection with the celebrated raiser, Mr. Sisley, announces a selection bearing the names of: *Henri Beurier, Anna Montel, C. Wagner, Rodbard, Sylphide, Louis Buchner, Henri Lecoq, Louis Agassiz.* Our space is insufficient to give the descriptions of these varieties, but we recommend giving them a trial.

— Parasiticism of mistletoe upon itself. — At one of the late meetings of the Royal Horticultural Society of London, Dr Maxwell Masters exhibited specimens of mistletoe from Mr. Corderoy of Didcot, which presented the strange phenomenon of the seeds having germinated and grown upon the plant which gave them birth.

— Continental and other horticultural exhibitions for 1875. — It may interest some of our readers to know the dates of the following shows:

Ghent	March	12-17.	Bremen	April	10.
Liége	»	28 and 29.	Bruges	»	11.
Antwerp	April	4-7.	Vienna	»	22.
Amsterdam	»	8.	Chili	Sept.	16.
Strasburg	»	7.	Versailles	»	19-21.

— Winter Flowers. — The month of January and early part of February was extremely mild in England, and the following plants were observed in bloom at Tooting about the middle of the second month: *Crocus aureus*, *Lucianus Olivierii*, *stellaris*, *luteus*, *sulphureus*, *striatus*, *Imperati*, *Sieberii*, *versicolor*, *adriaticus*, *biflorus*, *Leucoium vernum*, *Scilla sibirica*, *Galanthus nivalis*, *G. plicatus*, *G. Imperati*, *Anemone blanda*, *Eranthis hyemalis*, *Triteleia uniflora*, the variety *conspicua*. Mr. Fyerman of Cornwall reported the following plants in flower: *Anemone coronaria*, *Narcissus minor*, *N. tazetta*, *Iris stylosa*, *I. reticulata*, *Saxifraga crassifolia*, various species of *Muscari*, *Veronica Andersoni variegata*, *Habrothamnus fascicularis*, *Grevillea rosmarinifolia*, *Cytisus fragrans*, *Vittadinia triloba*, *Narcissus pseudo-narcissus*, *minimus*, *Telemonius*, *intermedius*, etc. We are told that the weather has been equally favourable in the south of France, and winter flowers abundant.

— Polymorphism of Fungi. — In response to the question on this subject proposed by the Royal Academy of Belgium, Mr. Alfred Gilkinet sent in a memoir, which has been "crowned" by the Academy and rewarded with a gold medal of the value of £ 24, in consequence of the very favourable report passed upon it by Mr. E. Morren. The author shows that the presumed parasitcism of some species is an error, and he dispels the last doubts upon this point. This dissertation will not prove very agreable to the partisans of transformation. Mr. Morren tells us that the question could not be treated more exhaustively, and he gives the author the most unqualified praise for the manner in which he has executed it. The complete work will shortly appear.

— Change of climate in Scotland. — At a meeting of the Meteorological Society of Edinburgh on the 10th ult. Mr. Buchan read a paper on the bearing of meteorological records on the supposed change of climate in Scotland, a subject on which much has been written of late by Mr. Macnab and others. Mr. Buchan concludes that there has been no general tendency towards a permanent change, either as regards summer heat or winter cold.

— Obituary. — Charles Lyell, the eminent English geologist, did not long survive Elie de Beaumont. He was a most zealous advocate of the slow formation of the earth, and the opponent of geological periods, determined by successive cataclysms. We shall not attempt to review his extensive labours; but such men may be said to belong to all sciences, and more directly to botany through palæontology.

E. André.

Pl. CXCVIII.

MASDEVALLIA POLYSTICTA, REICHB. FIL.

NAT. ORD. ORCHIDEAE.

For ETYMOLOGY and GENERIC CHARACTER, see *Ill. Hort.* plate in preceding part.

SPECIFIC CHARACTER : *folia* lineari-ligulata crassa basi valde attenuata canaliculata apice emarginato dejecto; *racemus* pluriflorus; *pedunculus* gracilis obtuse triangulus, bracteatus, bracteis ovato-carinatis acutis membranaceo-pellucidis ovaria triquetra alato-undulata superantibus; *flores* sessiles apice pedunculi paulo remoti; *sepala* basi in cyathum mento obtusangulo coalita, aequilonga, sparsim pilosula, plus minus ciliolata, longe caudata, alba v. luteola punctis atrosanguineis conspersa, basi intus aureo-lineata, superius alteris triplo latius, ovatum v. triangulum circa 1 cent. longum, trinerve, omnibus caudis aureis basi purpureo punctatis apice obtusis dissimilibus 20-25 mill. longis; *petala* ligulata apice retusa apiculata serrata, trinervia; *labellum* aureum lobis lateralibus angustis oblongis supra lobum medium linguiformem haud apiculatum decurrentibus; *androclinium* superne serratum. — In Nova-Granata legit cl. Roezl, anno 1873. — Ad viv. desc. in hort. Linden. — E. A.

Masdevallia polysticta. Rchb. fil. *Gard. Chron.* 1874, I, p. 338, et II, p. 290.

This attractive species of *Masdevallia* was discovered as recently as last year, by Mr. Roezl, in the cool regions of New Grenada. It was in the first instance named and described by D^r Reichenbach in the *Gardeners' Chronicle* to secure priority, and subsequently sent in the living state to Mr. Linden and also to England.

According to Mr. Roezl's description, the plant is found in the elevated cordillera, where it forms large tufts, often bearing as many as twenty spikes of expanded flowers at one time, giving it some resemblance to *Odontoglossum niveum*. There is nothing in this statement to surprise us, for the plant from which our plate was prepared bore twelve spikes of open flowers at the beginning of last February.

The flowers are quite peculiar in their aspect, being sprinkled all over with minute purple dots, standing out very distinctly on the yellowish-white or flesh-coloured ground, according to the variety. Indeed there are already two distinct varieties in commerce, both that with the pink, and that with the yellowish-white ground are equally charming.

This slight difference does not place any difficulty in the way of their specific identity, and in all other particulars they agree with the description given above. In drawing up our description we were able to correct some errors in that given by D^r Reichenbach in the *Gardener's Chronicle*, 1874, II p. 290. Thus, the caudal appendage of the upper sepal is not longer than the others in the living plant; it is sometimes shorter, or longer, or of equal length, without any regularity, in the flowers we have seen, and of which we have several before us in the dried state, as we write. The labellum is not apiculate, but obtuse. It is possible, however, that these characters varied in the plant, which served for his description, and the importance would be slight indeed, if it came from another source than from the grand legislator of orchids, who imagines himself infallible in his own glory.

But a truce to such trifles, for they do not affect the beauty of one of the most charming additions of recent times to the temperate Orchid-house.

E. A.

SERICOBONIA IGNEA, LIND. & AND.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

MASDEVALLIA POLYSTICTA, Rchb. fil.

P. De Pannemaeker, ad nat. pinx. in Horto Lind. J. Linden, publ.

PL. CXCIX.

SERICOBONIA IGNEA, LINDEN & ANDRÉ.

NAT. ORD. ACANTHACEAE.

ETYMOLOGY : a word composed from the two genera *Sericographis* and *Libonia*, to perpetuate the names of the parents of this hybrid.

GENERIC and SPECIFIC CHARACTERS : *suffrutex* glaber, ramosus, ramis nodoso inflatis subtetragonis lineis 4 subelevatis; *folia* glabra, distantia, ovato-lanceolata basi in petiolum longe decurrentia, plana, v. subundulata laxe crenata nervis arcuatis filiformibus subtus albis prominentibus, nervulis reticulatis; *flores* in racemos laxos secundifloros dispositi, pedicellis nutantibus gracilibus longis inaequalibus plurifloris; *calyx* 8 mill. longus, hispidulus, 5-fidus laciniis subulatis fere basim attingentibus, *bracteis* bracteolisque pluribus basi suffultus; *corolla* subringens, 4 cent. longa, cylindracea subangulata, extus intusque hispidula, aurantiaco ignea; *lobia* subaequalia 4 mill. longa, erecta, superius fornicatum integrum obtuse acutum, inferius tribolatum lobis ovatis acutiusculis; *stamina* 5 corollae tubo brevi intus inserta, 3 abortiva in squamis adnatis oblongis sericeo-pilosis nitentibus mutata, 2 fertilia filamentis e basi ad medium adnatis aequilongis pilosulis apice nudis; *antherae* hastatae biloculares loculis inaequaliter insertis oblongis infra mucronatis; *stylus* inclusus (ut stamina) filiformis coccineus, apice minute furcatus stigma minium breviter conicum, album dimidio obtegeus; *ovarium* oblongo-conicum viride, glabrum, basi disco annulari carnoso insertum; *capsula* seminaque.... deficiebant. — *Genus hibridum novum inter* Sericographidem Ghiesbreghtianum (*patrem*) *et* Liboniam floribundum (*matrem*) *fecundatione adulterina conditum.* — E. A.

Sericobonia ignea, Linden et André, gen. hyb.

The remarkable plant, the subject of the foregoing description, and of which we here give the portrait, is the result of the cross fertilisation of two distinct Acanthaceous genera, *Sericographis* and *Libonia*. Instances of hybrids between distinct genera are not common. Three years ago, Dr Masters published an account of one (*Gard. Chron.* 1872, p. 358) between *Lapageria rosea* and *Philesia buxifolia*, citing at the same time similar productions, as between *Malva* and *Malvaviscus*, *Chamaerops* and *Phoenix*, etc. Dr Weddell *(Ann. des Sc. nat., 3e sér. vol. XVIII)* had previously pointed out cases of hybridity between *Lychnis* and *Saponaria*, *Ervum* and *Vicia*, *Lychnis* and *Cucubalus*, *Ipomaea* and *Convolvulus*, *Nicotiana* and *Datura*, *Papaver*, and *Chelidonium*, *Papaver* and *Glaucium*, *Lavatera* and *Hibiscus*, and between *Aceras* and *Orchis*. But after all, these are still very rare exceptions. The names that can be given to these productions are very perplexing to botanists. In the case of hybrids between species it is usual to preserve the names of the two species which gave them birth, but this course is more difficult with genera, in consequence of the risk of encumbering nomenclature with long, ill-sounding names. A very good alternative, employed by Dr Masters at the suggestion of Prof. Oliver, is to devise a partial blending of the two names. In this way the hybrid between *Philesia* and *Lapageria* became *Philageria.*

Whe shall therefore follow this precedent, composing the name of our hybrid from those of its parents, and call it *Sericobonia.*

It is a curious fact, though there is nothing in it to surprise those familiar with the results of cross-fertilisations, that the female plant had little influence on the offspring of its seeds, our plant coming much nearer to *Sericographis,* which furnished the pollen, than to *Libonia*, which bore the seed.

In aspect, *Sericobonia* is entirely distinct from *Libonia*, of which it does not in the least present the compact, erect habit, small, fleshy leaves, and innumerable sparkling flowers. Moreover *Libonia* differs from it in many other characters, such as its elliptical entire leaves, at most two inches long, and very shortly petiolate, flowers not regularly geminate, very small bracts, orange-scarlet corollas in which yellow predominate in the upper part, cordate-ovate anthers and in the absence of the three silky staminodes or barren stamens. But although our plant is so easily distinguished from *Libonia* in habit, it approaches it closely in other characters, and is in reality intermediate between this genus and *Sericographis.*

On the other hand, it differs from *Sericographis Ghiesbreghtiana* by the following not very conspicuous though important characters: joints of the stem rounded, swollen and of a reddish-brown colour; leaves ovate-lanceolate, not elliptical, and destitute of glandular dots; peduncles several-flowered, not two-flowered; glandless calyx with very long lobes; unequal bracts and bracteoles; corolla about an inch and a half long, slightly hispid, not glabrous, not purple but orange purple; upper lip entire and not bifid, etc.

It will be seen how very subtle these differences are, especially if we remember that the distinguishing characteristics of the genus *Sericographis*, as founded by Nees ab Esenbeck, are present; apart from the deviations indicated. It also shows the preponderating influence of the pollen in fecundation, a phenomenon frequently proved by Mr. Naudin and other observers.

Sericobonia ignea will be one of our best greenhouse plants for winter flowering. We are confident of shortly seeing it take its place as a market plant by the side of its mother *Libonia floribunda*, and disputing the palm with *Asphelandra*, *Stephanophysum*, *Ruellia* and other good Acanthaceous plants so valuable during the rigours of winter.

E. A.

PL. CC.

VRIESIA (?) GUTTATA, LINDEN & ANDRÉ.

NAT. ORD. BROMELIACEAE.

ETYMOLOGY : Dedicated to Mr. De Vriese, professer of Botany at Amsterdam.

GENERIC CHARACTER : *sepala* tria convoluta aequalia, *petalis* apice revolutis (an semper?) breviora; *squamae* cuique petalo geminae semiadnatae indivisae; *stamina* exserta tria libera, petalorum basi inserta, tria inter petala inserta iisque basi connata, *antherae* lineares planae posticae; *ovarium* semi-inferum conicum, stigma trilobum, lobis convolutis et sinuatis villosis. — *Folia* plana seu canaliculata erecta; *flores* distichi; *bracteis* magnis canaliculatis coloratis.

Vriesia, Lindley, *Bot. Reg.*, 1843, tab. 10.

SPECIFIC CHARACTER : *folia* basi le cyathum apertum disposita, loriformia, basi dilatato gibbosa, medio constricta, canaliculata, mucrone apicali longo deflexo, integerrima, inermia, coriacea, glabra v. pilis raris caudicantibus adpressis induta, supra viridi-cinerascentia, infra maculis vel guttulis atrosanguineis nunc remotis, nunc in vittis transversalibus (*Tillandsiae splendentis* modo) conspersa; *flores*..... — In provincia Sanctae-Brasiliensis. Ad. viv. haud flor. desc. in hort. Lind. — E. A.

Vriesia (?) guttata, Linden et André, *sp. nov.*

This pretty Bromeliaceous plant, which we had under observation in Mr. Linden's establishment ever since 1870, is a native of the province of St. Catherine, in Brazil, where it was collected by Mr. Gautier, who sent seeds of it to various places in Europe. Thus, for instance, Mr. Isidore Leroy, of Passy, received it at the same time, and we have also seen some fine specimens of it in the gardens of the Luxembourg, Paris, and at Mr. Durand's, at Bourg-la-Reine, near Paris.

It must not be confounded with a neighbouring species, of which we also give a portrait, under the name of *V. sanguinolenta*, and which comes from New-Grenada.

We have hitherto not seen the flowers of *V. guttata*, and therefore we are not certain that it belongs to the genus in which we have provisionally placed it. We have nothing beyond the general aspect of the plant to guide us, but this is a tolerably safe index, and almost everybody who has seen it agrees with us in believing it to be a *Vriesia*. The leaves are united at the base of the plant in the form of a vase, and are concave and gibbous at the base, compressed towards the middle, channeled, spreading out flat upwards and furnished with a long recurved mucro at the top. They are devoid of spines, and glabrous, or with a few scattered whitish appressed hairs. Their upper surface is a grayish green, and the under surface, of a deep green ground, is sprinkled over with stains or spots of an intense blood-red, tinged with violet. These spots are solitary, or collected in transverse bands, like *Vriesia (Tillandsia) splendens*, but more distant. Their shape varies considerably in the same plant, and especially according to the age of the individual. Nevertheless, it is easily distinguished from all other species.

We impatiently await its flowering to enable us to complete our description. E. A.

PL. CCI.

VRIESIA (?) SANGUINOLENTA, LINDEN & ANDRÉ.

NAT. ORD. BROMELIACEAE.

For ETYMOLOGY and GENERIC CHARACTER, see preceding plate.

SPECIFIC CHARACTER : pl. robusta; *folia* Billbergiformia e basi (haud gibbosa) erecto decurvata, canaliculato-loriformia, marginibus subconvolutis ciliolatis mucronatis acumine abrupte contorto longo deflexo, in parte basilari vaginante furfuracea, viridia, maculis irregularibus atrosanguineis basi crebrioribus centro viridi ocellatis conspersa, *flores*.... — In Nova-Granata (Choco) legit cl. Roezl, anno 1872. — Ad viv. desc. in hort. Lind. — E. A.

Vriesia (?) sanguinolenta, Linden et André, *sp. nov.*

We are indebted to Mr. Roezl for this species, which he discovered in New Grenada (Choco), whence he sent seeds of it to Mr. Linden in 1872. It is readily distinguished from *V. guttata* by its more vigorous habit, by its ciliated leaves not being gibbous at the base, and the blood-red spots being ocellated with a dot of green in the centre. Other differences will become more apparent as the plants increase in development. Our principal object in publishing them at the same time is to forestall the possibility of their being confounded at first sight by superficial observers.

We are in the same position respecting the flowers of this species, and its exact relationship. A vigorous plant with spreading leaves like those of a *Billbergia*, not gibbous or bulbiform at the base, rising at first and the upper part curved downwards, strap-shaped, channeled, margin slightly curled and ciliate, furnished with an abruptly twisted, long, deflected point, more or less clothed with a rusty mealy tomentum on the under surface. Both surfaces green, variegated with blood-red patches, more abundant towards the base, and all ocellated with a very small central green spot.

E. A.

Lith. Chromo. de L. Stroobant, à Gand — VRIESEA (?) SANGUINOLENTA. — VRIESEA (?) GUTTATA. — J. Linden

HORTICULTURAL CHRONICLE.

April, 1875.

— PRIZES OFFERED BY THE FRENCH ACADEMY OF SCIENCES. — We have seen the following particulars published by the Academy respecting the prizes it has been proposed to offer:

The Barbier Prize of 2000 francs for a valuable discovery in surgery, medecine, pharmacy or botany, bearing upon the art of healing.

The Alhumbert Prize will be withheld until 1876 for a treatise on the nutritive value of funguses.

The Desmazières Prize of 1600 francs for the best memoir on cryptogams.

The Thore Prize for the best work on European cellular cryptogams.

The La Tous-Mélicoq Prize of 900 francs for the best essay on the flora of the north of France.

The Bordin Prize of 3000 francs for a study of the integuments of the seed in angiosperms and gymnosperms.

The prizes awarded by the Academy at the end of last year were as follow:

The Desmazières (1872) to Mr. Cornu for a monograph of the *Saprolegnieae*, and 1000 francs to Mr. Bornet for his writings on *Lichenes.*

The Barbier Prize (1872, in part) to Mr. J. Chatin, essay on the *Valerianeae.* 1000 francs to Mr. Lefranc, on *Atractylis gummifera.*

The Desmazières Prize (1873) to Mr. Girodot on the *Lemaneaceae* (*Algae*).

1000 francs to Messrs. Van Tieghem and Lemonnier on the *Mucorineae.*

The Bordin Prize (1873) to Mr. J. Vesque, on the *Anatomy and Physiology of the Dicotyledons.*

The Gegner Prize (4000 francs) (1873), *Fossil Botany*, valuable works approved by Mr. Brongniart.

— INTERNATIONAL GEOGRAPHICAL CONGRESS. — It has been announced that the meeting will be opened on the first of August, at the Tuileries, in the pavillon de Flore.

— CEDRELA SINENSIS. — This is a valuable hardy tree from the north of China; it was named and described by Adrien de Jussieu (*Mém. du Mus. d'hist. nat.*, XIX, 255, 294), and its introduction has long been desired. Now, it appears, that this has been accomplished. In 1862, Mr. Eug. Simon sent a tree from China to the *Jardin des Plantes* of Paris, and Mr. Carrière took it to be a new species of *Ailantus*, and published it as *A. flavescens*. The same writer now declares it to be the *Cedrela sinensis* of Jussieu, and therefore this tree has long been in Europe, though unrecognised. There is a specimen of it in the *Jardin des Plantes* upwards of 25 feet high, with a girth of trunk of about twenty inches, at three feet from the ground. It also exists in several nurseries, and is known in commerce as the Yellow Ailantus, which must give way to the correct appellation of Chinese Cedrela.

— VRIESIA REGINA (*Glaziouana*). — The magnificent Bromeliaceous plant with ample varnished foliage, known under the name of *Vriesia Glaziouana* of our predecessor Lemaire, flowered last year in the Imperial gardens at Vienna, under the direction of Mr. Antoine. Mr. Ed. Morren, to whom the flowers were submitted, recognised in them the *V. Regina* of Beer, and therefore it becomes necessary to rectify the specific name of this plant, which is pretty widely spread in cultivation, though it does not appear to have previously flowered. Its leaves attain a length of 3 to 5 feet with a breadth of 4 inches; they are unarmed, smooth, and of a beautiful bright green. The inflorescence rises to a height of 6 feet, forming a two-ranked panicle of recurved spikes, springing from large rose-pink bracts. The flowers are white and exhale a Jasmine-like perfume. Mr. Glaziou has several times sent it from Rio-de-Janeiro, where it grows in grand tufts upon the rocks.

— PITCAIRNIA CORALLINA. — We have also the pleasure of announcing the flowering of this beautiful Bromeliaceous plant, introduced by Mr. Linden from the forests of Choco, New-Grenada. It has recently displayed its handsome coral-like blossoms in the collection of Mr. de Rothschild at Ferrières, thanks to the able management of Mr. Bergman, the head gardener.

— NEW DOUBLE-FLOWERED PELARGONIUMS. — Mr. Lemoine of Nancy is equally persevering with the raisers of Lyons in improving the double-flowered varieties of *Pelargonium zonale.* We have received two coloured plates from him, representing the following new varieties:

Fille d'honneur, white slightly tinged with pink.

Lucie Lemoine, white suffused with lilac; trusses very large.

Richard Larios, red centre, bordered with white.

Guillion-Mangilli, deep red, fiery centre.

Emile Lemoine, salmon, brighter towards the margin, large truss.

Madame Thibaut, violet-red, brighter in the centre.

We recommend a comparative trial of these varieties with those of other raisers.

— GRAFTING PEARS ON COTONEASTER. — We have recently again seen a notice of the experiments of Dr. Bretonneau, the celebrated physician of Tours and a lover of gardening, on the grafting of distinct genera. He has successfully tried grafting pears on *Cotoneaster affinis* and on *Amelanchior.* The results were very curious and interesting, and were crowned with success; but similar experiments on the evergreen species, *C. buxifolia* and *C. microphylla* failed. We shall have occasion to entertain our readers again on this subject when we ourselves resume these experiments, in which we hope we shall have some followers.

— GLAUCIUM SERPERI. — Mr. Heldreich, Professor of botany at Athens, found a new Papaveraceous plant last year near the Laurium silver mines, which are being worked again. He named it *Glaucium Serperi* and a figure of it was given in the *Gartenflora* of November, 1874. This species appears to have sprung up from seeds which have lain dormant in the ground for more than 1500 years. This long preservation is the more remarkable as these seeds are oily

and in a general way do not keep well. It is the opinion of Mr. De Candolle that the ancients cultivated this plant for the oil it secretes.

— Exhibitions. — The great Flower show of the season at the Crystal-Palace will take place on Saturday May 29th. — The Midland Counties Grand Rose show and Horticultural Exhibition (open to all England) will be held at the Nottingham Arboretum, on Thursday, Friday and Saturday, the 8th., 9th. and 10th. of July.

— An Illustrated Monograph of all the Lilies. — A splendid work is to be devoted by Mr. Elwes to the noble genus *Lilium*, in which he will be assisted by Messrs. Baker, Wilson, Leichtlin and others. It will be published in parts, each part containing eight coloured plates by Mr. Fitch, price one guinea. Address: Mr. Elwes, 6, Tenterden street, Hanover Square, London.

— A new Garden at Adelaide, South Australia. — Dr. R. Schomburgk has been preparing a plan for a magnificent garden, which it is proposed to lay out in the vicinity of the town of Adelaide. Our confreres of the fifth part of the world make rapid progress in botanical and horticultural works.

— International Exhibition at Cologne. — This exhibition is to be opened on the twenty-fifth of August next. The Netherlands Steam Navigation Company and the Belgian Company, whose steamers ply respectively between London, Rotterdam, Dover and Ostend, as well as the Rhenish Railway Company, have reduced the freight of goods to be sent to the exhibition by 50 per cent, and no duty will be charged on such objects, unless they should be sold in the country.

— Obituary. — Mr. Cherpin, the editor of the *Revue des Jardins et des Champs*, known in this country more especially for his partiality to Roses, died at Lyons on the tenth of February last.

Ed. André.

PL. CCI.

CROTON (CODIAEUM) ANDREANUM, LINDEN.

NAT. ORD. EUPHORBIACEAE.

ETYMOLOGY: An alteration of the vernacular name *Codiho*, in Ternate, one of the Molucca Islands.

GENERIC CHARACTER: Adeundae, amicissimi lectores, *Euphorbiaceae*, ex Müller, argoviensi, in Dc. Prod. p. XV, 1032. Quo quidam in loco ob synonymiam multo nimis locupletam hos adhibere cum perlongum esset, sectionis, cui spectat species, satis erunt.

SPECIFIC CHARACTER: Sectionis Eucodiaeum; *calyces* utriusque sexus 5-partiti. *Petala* rudimentaria. *Discus* ♀ et ♂ evolutus. *Stamina* pluriserialia. *Styli* simplices.

Frutices moluccani et insularum Oceani Pacifici glabra. Folia alterna plus minusve spathulata (oblongo v. ovata lanceolata, seu etiam elliptica) integra pallida saepe variegata. Flores monoici racemosi. Inflorescentiae terminales et axillares unisexuales. Discus ♂ 5-glandulosus, ♀ urceolaris. Stamina circiter 25, filamentis liberis; antherae subdistinctae extrorsae. Styli tenues teretes breviter tubulati. Ex *Ill. Hort.*, 1867, sub tab. 534.

— Character of the Hybrid. — Of vigorous habit, with erect branching cylindrical stem; leaves large, or very large, about ten inches long by three inches broad in the specimen described in January of the present year. Petiole $1\frac{1}{4}$ to 2 inches long, enlarged at both ends, compressed above, violet in the middle, green at the ends, continued into a very prominent midrib, of a pure brilliant orange-yellow beneath. The elliptical acute blade is somewhat heart-shaped at the base, with an entire slightly undulated margin, of a leathery texture, with a beautiful varnished deep green surface; midrib and principal nerves at first pale yellow, as in *C. maximum*, then changing to a bright orange, encircled with a narrow zone of the same colour.

This handsome plant was raised by us from seed, the result of an artificial impregnation of *C. maximum* with the pollen of *C. Veitchi*. Among the numerous crosses in this group there is none more striking than the plant before us, which is quite intermediate in its character between the two parents. It unites the vigorous growth of *C. maximum* with the habit, bright hues, and disposition of the colours of *C. Veitchi*. We have observed that since Mr. Ed. André, to whom we have dedicated this our first personal acquisition, made his description from the living plant in January, it has gone on increasing in size and vigour, and in the brillancy of the colours it displays. Hence we entertain a strong hope that *C. Andreanum* will take its place among the best acquisitions of late years in Crotons, whether raised from seed or introduced; and we also look forward to being able to send it out next year [1].

Lucien Linden.

[1] The croton in question belongs to the genus *Codiaeum* of Rumphius, and is one of the numerous varieties of *C. pictum*, Hook., whose area of distribution extends from India to the South of Oceania, from Java to the New Hebrides, the Solomon and the Fiji isles.

E. A.

CROTON (CODIÆUM) ANDREANUM, LINDEN.

AZALEA BETTINA DELLA VALLE (Et. Lind.).

P. De Pannemaeker, ad nat. pinx. in Hor

J. Linden, pub.

TRITHRINAX BRASILIENSIS, Martius.

P. De Pannemaeker, ad ... J. Linden, publ.

PL. CCII.

AZALEA BETTINA DELLE VALLE.

NAT. ORD. ERICACEAE.

For ETYMOLOGY and GENERIC and SPECIFIC CHARACTERS, see *Ill. Hort.*, 1870, under plate 171.

CHARACTER OF THE VARIETY : — This charming new variety has lovely pink and white flowers, as delicately beautiful as the Marquis delle Valle di Casanova's child, whose name it bears; and Mr. de Pannemaeker's portrait of it is a most successful and faithful one. It clothes itself with a profusion of large clusters of double, well formed flowers, the outer petals of which are somewhat heart-shaped, pure white, and irregularly dashed with longitudinal bright carmine bands.

PL. CCIII.

TRITHRINAX BRASILIENSIS, MARTIUS.

NAT. ORD. PALMEAE.

ETYMOLOGY : From τρες, three, and θριναξ, a fan.

GENERIC CHARACTER : Hermaphrodita aut polygamo-monoica (floribus abortu non omnibus fertilibus). *Spathae* plures incompletae. *Flores* sessiles, bracteati. *Calyx* cupularis, trifidus. *Corolla* tripetala, petalis aestivatione per marginem imbricatis. *Stamina* sex, basi subdistincta, hypogyna, antheris linearibus. *Pistilla* tria, distincta, stylis subulatis, stigmatibus simplicibus. *Bacca* plerumque unica maturescens. *Embryo* versus verticem dorsalis, in albumine aequabili. *Caudex mediocris, arcte annulato cicatrisatus. Frondes palmato-multifidae, vaginis et petiolis armatis, laminarum laciniis induplicatis bifidis, filis passim interjectis. Spathae plures basilares, coriaceae. Spadix decomposito-ramosus. Flores et fructus viridi-flavescentes, parvuli.* (In d'Orb. *Voy.* t. VII, p. 43).

Trithrinax, Mart. *Palm. Brasil.* p. 149, 241, t. CIV; — Endl. *Gen.*, N° 1760; Kunth, *Enum.*, p. 247.

SPECIFIC CHARACTER : *Caudex* gracilis, diametro 2-3 pollicari in sex ad decem pedum altitudinem evehitur. Ligno est duro, pallide rubello, et ad peripheriam saturatius colorato, epidermide griseo-pallida. Obique plerumque adscendit aut inclinatur, in superiore parte dense obvolutus basibus frondium persistentibus, in inferiore cicatricibus frondium delapsarum dense annulatus. *Frondes* in caudicis vertice sex ad octo, patentes et erecto-patentes, paucae preterea emortuae et exsiccatae dependentes, flabelliformes circiter tripedales. *Petioli* ima basi vaginante sunt instructi e fibris crassis firmis rigidis facta et ita descussatim contextis, ut opus reticulatum efficiant; fibrae verticales ulterius promissae in spinas subulatas complanatas exeunt. Antica petiolorum pars gracilis, terminata lamina circumscriptione fere orbiculari, colore saturate viridi. *Lamina* dividitur in lacinias 22-27 lineares per duas tertias totius longitudinis inter se liberas, per tertiam partem unitas et connatas, bifidas, intermedias longiores. *Spatha* universalis nulla. *Spadices* plerumque in eodem caudice *flores* masculos et femineos mixtos continent. Rami spadicis breves, conferti. In floribus masculis, qui superiorem spadicis plagam occupant, stamina sex, petalis tribus lineari-oblonga obvoluta. Color florum viridulus. *Pistilla* tria. *Bacca* ovalis, diametro octo millimetrorum, epidermide viridi, demum nigricante, pulpa parca. — In provincia *Rio-Grande* et Chiquitorum, *S. Crucis de la Sierra*, prope *Cordillera oriental* (d'Orbigny) (Martius, in d'Orb. *Voy.* v. VII, p. 44).

This fine Palm is a native of Brazil, which the Indian Guarayos, who use the spiny sheaths wherewith to plait hats, call *Saho*, near Santa Cruz de la Sierra; and it is the *Huaichich* of the Chiquitos. Martius met with it in South Brazil, Weddelland in Bolivia, and d'Orbigny near the 31st parallel of south latitude, on the Rio-Parana, it also grows in Bolivia under the 17th. degree, in clumps and woods.

In addition to its beautiful fan-shaped foliage, glaucous beneath, this handsome Brazilian Palm offers a remarkable peculiarity. It consists in the unusual disposition of the embracing sheaths of the base of the leaves. These sheaths are composed of fibres which are at first parallel and longitudinal, then obliquely interlaced, and finally plaited together at right angles, like the Pandanus mats in which coffee is sent home from the Antilles and Bourbon. At the summit these strips unite, forming a series of very long stout spines, abruptly curved downwards, and evidently intended for the protection of the flower and fruit from depredatory climbing animals.

E. A.

COLQUHOUNIA VESTITA.

Two years ago we received a plant in Touraine under the name of ***Phlomis species?*** It is a very pretty Labiate, not much known in gardens, the correct name of which is *Colquhounia vestita*, of Wallich. It is a native of the mountains of India, and was first discovered by Wallich in Kamaon, afterwards by Edgeworth at Pyrhunda, and by Griffith in Assam. It came to Europe by way of England, and is still very rare in collections. Most likely it grows at a considerable elevation, as it has withstood two winters in our garden at Lacroix, and it stems were not frozen until the thermometer fell to 10° Fahr.

This attractive shrub is of erect habit, and the young shoots, leaves and calyces are clothed with a dense white wool or felt. Towards the end of autumn, in October, it is covered with numerous spikes of minium scarlet flowers, producing a most charming effect. It merits more general cultivation as it will only need slight protection in the climate of London in very severe weather. Its flowers are valuable at a season when there is scarcely anything else except Chrysanthemums. We believe that the plant figured by Mr. Carrière in the *Revue Horticole* under the name of *C. tomentosa* is identical with *C. vestita*.

SELAGINELLA BRAUNII, Baker.

We have repeatedly spoken of the beauty of this perfectly hardy Lycopod, which may be seen languishing in many a hot-house in Europe, under the erroneous name of *Selaginella Wildenowii* (1). Dr. A. Braun gave it the name of *S. pubescens*, but that appellation having been previously given by Spring to a different species, it must be relegated to the synonymy.

In our garden it thrives exceedingly well in sandy peat on a north rockery, raising its handsome emerald green elegantly cut fronds in fair contrast with the pale white of its rachis.

With Mr. Pellier, at Le Mans the plant flourishes marvellously in the open air, fully exposed to the sun. Ten winters have not injured it in the least, and every season it increases in vigour. Indeed it is only in the open air that it develops its full beauty.

(1) *S. Wildenowii*, Baker is an entirely distinct species of climbing habit, attaining a height of 10 feet, or more, and a native of Malacca. There is therefore no confusion existing as to the proper application of the two names.

NEW PLANTS.

ODONTOGLOSSUM CANDIDUM, Lind. & And., *sp. nov.* Some few years ago Mr. Linden received an Orchid from the province of Cauca, in New Grenada, having the habit of *O. pulchellum*, but otherwise materialy differing from that species.

At the beginning of last year the plant flowered, and its flowers offered many points of resemblance to those of *O. Egertoni* of Lindley, a plant introduced into England about thirty years ago as a variety of *O. pulchellum*, and which was believed to be a native of Guatemala, as well as the type.

However, a closer examination easily enabled us to detect a number of differences between our plant and *O. Egertoni*. The principal are: bracts longer than the ovary instead of only half the length; labellum rounded and mucronate, not acute; a median tooth rising in the centre of the excavation; lobes of the clinandrium connivent and fringed, not entire; finally the native country, New Grenada.

We therefore publish the species as new, under the name of *Odontoglossum candidum*, Lind. and And. As an ornamental plant it does not offer any very striking features, but it is worthy of a place in the cool-house by the side of *O. pulchellum*, on account of the abundance of its pretty little white flowers (1).

(1) *Odontoglossum candidum*, Linden et André, *sp. nov.* — *Pseudobulbi* elongati ovoideo-ancipites, squamis carinatis inaequalibus magnis (quarum una foliacea 15 cent. longa); *folia* basi albo-annulata lineari angustata apice acuta 25 cent. longa 1 cent. lata pergamenea costa subtus prominente costis 3 translucentibus; *scapus* 6-florus et ultra, erectus gracilis anceps bracteis remotis longis carinato-acutis margine scarioso, florali ovario longiore; *flores* candidi, parvi; *sepala* ovato-acuta *petala*; subconformia sed obtusiuscula 2 inferiora connata apice lineari furcato; *labellum* subpanduratum apice mucronatum, basi excavatum dentibus 3, exterioribus 2 supra conniventibus, altera in medio excavationis luteae purpureo-punctatae sursum elevata; *gynandrium* erectum alis fimbriatis, *pollinia* pyriformia; *ovarium* cylindraceo-sulcatum clavatum. — In provincia dicta Cauca Novo-Granatensium, 1872. —

E. A.

HORTICULTURAL CHRONICLE.

May, 1875.

— Exhibitions. — We have received a circular respecting the forthcoming international Exhibition at Cologne. It will be held in the gardens of the Horticultural Society *Flora*, and will remain open from the twenty-fifth of August till the twenty-sixth of September. It will include all garden products with the exception of grapes and grape-vines, on account of the *Phylloxera*, and will comprise eight classes:

Horticulture, hardy and tender plants.

Garden Produce, fruits, products of the juices and fibres of plants, vegetables and seeds.

Garden Architecture, designs for parks and plans for structures.

Garden ornaments, fountains, statues, vases, etc.

Tools and machinery.

Collections of garden woods, seeds, insects, etc.

Cut flowers and fruit, and models of ditto.

Horticultural literature.

The Committee have entered into negotiations with the various carrying companies, and most of them have agreed to reduce the freight on goods by 50 per cent., and there is no duty to be charged on the objects exhibited unless they are sold and remain in the country. For English exhibitors it will be of special interest to learn that the Netherlands Steam Navigation Company and the Belgian Company, whose steamers ply respectively between London and Rotterdam and Dover and Ostend, as well as the Rhenish Railway Company, have granted the before-mentioned reduction.

A sum of 135,000 marks will be devoted to the purchase of objects for a lottery. Exhibitors will not have to pay anything for space. A public sale of the objects exhibited will take place after the twenty-sixth of September.

For any further information application should be made to the *Flora* Society, Cologne, Prussia.

— The Exhibition at Philadelphia in 1876. — The schedules of the horticultural section in this great exhibition have not yet reached us. Nevertheless we may state for the information of those of our readers who intend to exhibit hardy plants, which have to be planted out this autumn in the gardens of the Exhibition, should signify their wish as early as possible to the acting Committee of the Horticultural section of the Philadelphia Exhibition, and the conditions under which space will be granted for plantations will be shortly communicated.

— The International Exhibition at Brussels in 1876. — In accordance with circulars received, we announced a Great Exhibition at Amsterdam in 1876. It has since been decided not to hold it before 1877, after that at Brussels, where the cycle of International Horticultural Exhibitions and Congresses began, and whose turn comes round next year. A botanical congress will also meet at the same time in the latter city. We may expect again to see a fine show of vegetable wonders in the capital of Belgium.

— An International Potato show. — It has been arranged to hold an International Potato Show at the Alexandra Palace, Muswell Hill, on Wednesday, September 29, and Thursday, September 30 of the present year. The sum of £ 30 has been placed at the disposal of the committee by the Alexandra Palace company, as special prizes; and it has been arranged that this sum shall be given in the leading class of twenty-four varieties of Potato in prizes respectively of £ 8, £ 6, £ 4, and £ 2, the balance to be added to the first prize in the form of a handsome silver cup. On the evening of the first day the Committee, judges, exhibitors and others will dine together at the Alexandra Palace, under the presidency of Mr. Alderman and Sheriff Ellis; and at noon on the second day, a conference of Potato cultivators and others will be held. The Committee are exerting themselves to give this exhibition a truly international character. Schedules of prizes can be had of the Hon. Sec., Mr. Peter Mc Kinlay, 23, Upper Thames street, London, E. C.

— To prevent the depredations of birds and mice in seed beds. — We have lately seen an effectual remedy employed on a large scale in the establishment of Messrs. Transon brothers at Orleans, and though not actually new it cannot be too widely known, and therefore we may once more direct attention to it. All seeds with hard skins are dipped in red lead before sowing. Among others the seeds of Pines, which these gentlemen sow very largely, are subjected to this process; and neither bird nor insect will touch them afterwards. The method is simple and absolutely infallible.

— The French Pomological congress. — The meeting of this body will take place at Ghent this year, during the month of September; the exact date, however, is not yet fixed. We know so much, that the " *Cercle d'Arboriculture* " will organise an international Exhibition of fruits in that town. The " *Fédération des Sociétés d'Horticulture de Belgique* " has placed a sum of £ 8 at the disposal of the Committee for the best collection of seedling pears raised in Belgium.

— The Grape-vine in California. — The production of table grapes in California is enormous, to say nothing of the increase of vineyards, properly so called. Last year, General Bidwell planted 110,000 canes of the Muscat of Alexandria for the production of dessert fruit and raisins. It is said that californian raisins are equal in quality to the best produce of Malaga.

— Introduction of Plants from New Caledonia. — The first consignments of plants despatched by the expedition sent out by Mr. Linden, have arrived in good condition. They contain several splendid specimens of new tree ferns, new species of *Kentia* and *Kentiopsis*, Orchids, etc. etc. We have also the pleasure of announcing that some specimens of the noted and brilliant New Caledonian liliaceous plant,

Xeronema Moorei, have at length been introduced in a living state; and before long we shall doubtless have our senses delighted with the magnificent scarlet flowers, of this remarkable plant, the introduction of which was so ardently desired.

— BOTANICAL AND HORTICULTURAL EXPLORATION OF THE EQUATORIAL REGIONS OF THE CORDILLERA OF THE ANDES. — Since Mr. Linden gave up the personal direction of his establishments, he has devoted all his attention to the organisation of exploring expeditions to various little-known regions of the globe, and he was never so actively engaged in the development of these projects as he is at the present time. We have already spoken of the important expedition he has sent out to collect the floral riches of New Caledonia, the New Hebrides, the Fiji and Salomon Islands and New Guinea. A second party is actually engaged in ransacking the immense forests of the Cassiquiare and the upper Orinoco. A third is traversing the province of St. Paul and the Parana country, and a fourth, and very important expedition is now on its way to undertake the botanical and horticultural exploration of the equatorial regions of the Cordillera of the Andes.

This country has already been visited twice at Mr. Linden's expense by ordinary gardeners, whose investigations have done but little for the advancement of science; but this time a botanist, whose name is well known to our readers, and who aims at following in the foot-steps of such travellers as Ruiz and Pavon and Poeppig, is one of the party. He is accompanied by an experienced gardener, whose function it will be to collect living plants and seeds.

We are not at liberty to say at what point the travellers will enter upon their labours, but we may mention the countries it is proposed that they should traverse. It is the region lying between the plateau of Pasto to the north, and the Rio Huallaga to the south, touching at Quito, Cuenca, Loja, Huancabamba, Jaen de Bracamoros, Chachapoyas, Moyobamba, and the valley of the Huallaga from its source to its junction with the Amazon, etc.

— OBITUARY. — Belgium has recently sustained a great loss in the death of Mr. de Ghellinck de Walle, the late president of the *Société royale d'Horticulture et de Botanique de Gand*, and of the *Cercle d'Arboriculture de Belgique*.

His sudden demise caused great consternation among the horticulturists of Ghent, a few days after the Exhibition at Antwerp, where this distinguished amateur had gained new laurels with his splendid collections. The beautiful conservatories at Wondelgem were known throughout Europe for the fine collections they contained of Palms, Tree-Ferns, Dracaenas, Aroids, Azaleas, Cycads, etc., which had become famous and placed their possessor at the head of Belgian amateurs. His courteous and affable manner towards foreigners of similar tastes won him general respect and admiration, and his exertions in the cause of horticulture gained him the esteem and regard of his fellow-citizens.

ED. ANDRÉ.

PL. CCIV.

ARAUCARIA RULEI, F. MUELLER.

NAT. ORD. CONIFERAE.

For ETYMOLOGY and GENERIC CHARACTER, see *Ill. Hort.*, p. 15, 1875.

SPECIFIC CHARACTER, *arbor* ut videtur 50 pedes (et ultra?) alta; *rami* sub 4 verticillati; *folia* coriacea undique dense imbricata adpresso-incurva oblongo-lanceolata acutiuscula vel obtusiuscula haud pungentia dorso nervo crassiusculo longitudinal notata et nitida facie planiuscula; f. ramorum inferiorum lanceolata et subpatentia (videntur polymorpha); *amenta* mascula crassa oblonga obtusa; *bracteae* antheriferae plurimae imbricatae apice late lanceolato-acuminato sursum verso; *antherae* 7-9, *squamae* late subrhombeae basi longe augustatae apice longo acuminato subulato; *nuculae*..... Crescit in Nova-Caledonia (Char. ex cl. Parlatorei desc. in DC. *Prodr.* desumpt.). Vidi viv. in hort. Linden. — E. A.

Araucaria Rulei, Ferd. Mueller, pl. exsicc.

Eutacta Rulei, B. Verlot, in *Rev. hort.* 1866, p. 277.

Eutacta Rulei polymorpha, Carr., *Traité des Conif.*, p. 392, et éd. II, p. 605 et 607.

This magnificent tree, whose curiously imbricated foliage struck with surprise all those who saw the first living examples introduced into Europe, grows on the summits of mountains in New Caledonia, at Kanala, and elsewhere, probably, in the same island. In stature it does not appear to equal the other species of the genus (*A. excelsa*, etc.), but in elegance it is surpassed by none. The hard leaves are imbricated in four rows on the branches, appressed and recurved, oblong-lanceolate, slightly acute or a little obtuse, not sharp-pointed, traversed on the back by a thick, prominent shining rib. Those of the upper branches and on young seedling plants offer the characters described, but we have grounds for believing with Prof. Parlatore that those of the larger adult branches are probably lanceolate, rather spreading and different from the others, that is if herbarium specimens have not been confused. The male cones are thick and oblong obtuse; staminiferous bracts numerous imbricated, with a broadly lanceolate acuminate upcurved tips. Anthers 7 to 9; scales broadly subrhomboidal, narrowed at the base subulate acuminate at the apex. Fruit unknown. We agree with Mr. Carrière in the opinion that this and other New Caledonian species are polymorphous, and difficult to determine with certainty.

E. A.

ARAUCARIA RULEI, F. MUELLER.

P. Depannemaeker, ad nat. pinx. in Horto Lind.

PITCAIRNIA STAMINEA, LODDIGES.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

PL. CCV.

PITCAIRNIA STAMINEA, LODDIGES.

NAT. ORD. BROMELIACEAE.

ETYMOLOGY: Named after William Pitcairn an English physician and amateur botanist of some note.

GENERIC CHARACTER: *Perigonii* semi-superi sexpartiti laciniae exteriores calycinae, basi inter se connatae, lanceolatae, acuminatae, carinatae, erectae, interiores petaloideae longiores inferne in tubum approximatae apice galeatim incumbentes v. aequaliter patentes, basi intus squamosae v. rarius nudae. *Stamina* in annulo perigyna inserta; filamenta libera subulata; antherae lineares basi sagittatae. *Ovarium* semi-inferum triloculare. *Ovula* in loculorum angulo centrali plurima adscendentia anatropa. *Stylus* filiformis; *stigmata* 3 linearia spiraliter contorta. *Capsula* semisupera ovata-pyramidata trilocularis apice septicido-trivalvis, valvis, introrsum demum fissis. *Semina* plurima adscendentia teretiuscula, testa fusca scrobiculata, chalaza late discolore umbilicum setiformem chalazae apicali in acumen longe productae jungente. *Embryo* minimus rectus in basi albuminis dense farinosi, extremitate radiculari umbilicum attingente infera. — *Herbae americanae tropicae, foliis linearis v. ligulatis saepe spinoso-dentatis, caule erecto simplici, floribus racemosis, bracteatis.* — (Ex Endlicher Genera Plantarum n° 1305).

SPECIFIC CHARACTER: caespitosa; *Caricis* cujusd. habitu; *folia* lineari-lanceolata acuta, 50 cent. longa, 15 mm. lata, erecto-recurva, integerrima, passim furfuracea; *scapus* erectus, 1^m altus, gracilis, cylindraceus, albido-furfuraceus, ad nodos bracteatus bracteis ad apicem decrescentibus; *flores* racemosi pedunculis unifloris horizontalibus vel dependentibus 3 cent. longis bractea filiformi acuta iisque breviora munitis; *calyx* triquetrus lobis acuminatis acutis arcte appressis canaliculatis 2 cent. 1,2 longis; *corolla* vivide scarlatina duratione diurna lobis lineari lanceolatis 6-7 cent. longis 5 mill. latis, in tubum connatis basi nudis, a medio superne revolutis (post anthesin rursum erectis); *stamina* exserta, 8 cent. longa, *filamentis* compressis albis basi rubris antheris erectis filiformibus basifixis 8 mill. longis luteis; *stylus* cylindricus, stamina aequans; *stigma* trilobatum spiraliter contortum; *ovarium* trisulcatum, triloculare. — Nova-Granata.

Pitcairnia staminea, Lodd. (*Bot. Cab.* t. 775). *Bot. Magaz.* t. 2411.

Cochliopetalum stamineum, Beer, *Bromel.* p. 56.

This pretty plant was first introduced into England by Sir Thomas Hardy, who sent it to Lady Camphell more than fifty years ago. It was described in Loddiges *Botanical Cabinet,* and afterwards in the *Botanical Magazine* (in 1823), without any indication of its native country. We are glad to be able to fill this blank, Mr. Roezl having re-discovered it in 1872, in New Grenada. The plants raised from the seeds sent by him to Mr. Linden are of a more slender, taller habit, with looser fewer-flowered panicles, and longer more intensely scarlet flowers than those of the type described, and we (Mr. Linden and I) took it to be a new species, which wasto have borne the name of *P. fuchsioides*, but a careful examination did not reveal characters of sufficient importance to separate it from *P. staminea*.

Its charming, pendent flowers, of the most beautiful scarlet, and its graceful habit render it worthy of a prominent place in the tropical conservatory, where moreover it will thrive under the conditions suitable for most tropical Bromeliaceae, without any special care.

E. A.

PL. CCVI.

DICKSONIA CHRYSOTRICHA, MOORE.

NAT. ORD. **FILICES.**

ETYMOLOGY : dedicated to James Dickson, an English cryptogamist.

GENERIC CHARACTER : *sori* intra marginales in apice venae inserti; *indusium* inferum, subglobosum, coriaceum v. membranaceum, cyathiforme, integrum vel plus minus bivalve. — Species plerumque arborescentes, frondibus amplis coriaceis decompositis, nonnullae rhizomatae et (2 exceptis) bipinnatae. In America calidiore, Polynesia et in variis locis zonae temperatae (una Canadensis).

§§ *Eudicksonia.* — Indusium aperte bivalve, valva externa segmentis apice constituta. (Ex Hook. et Bak. *Syn. fil.*, edit. prim. p. 50).

SPECIFIC CHARACTER : arborescens; *frondes* bipinnatae; *pinnae* inferiores 30-25 cent. longae, 15 cent. latae; *pinnulae* lineares, inferne truncatae in rhachide excepto apice; *segmenta* lineari oblonga, dentata, 12 mill. longa, 4 lata, erosa; *rhachis* pilis aureo-brunneis nitidis dense vestitus, *rhachides* pinnarum et pinnularum asperi dense tomentosi, textura coriacea; *pinnulae fertiles* pauculum contractae; *sori* 2-6 in singulo lobo, *valvae* suborbiculares. — In montibus Javae, alt. 3300 met.

Dicksonia chrysotricha, Th. Moore, *Index Filicum*, p. 311.
— **Blumei**, Mett. (?).
— **javanica** (?), Blume.
Cibotium speciosum, Blume, mss. — Hb. Hook.
Balantium chrysotrichum, Hassk., *Fil. Jav.* 53; Id. *Bonpl.* 1858.
— **magnificum**, de Vriese, *Jungh. Jav.* I, 515, 660.
Alsophila lurida, Hassk., *Cat.*, 9, 34; Id. *Tijdsch. Ned. Ind.* III, 147.

This admirable Fern is one of the handsomest tree-ferns inhabiting our conservatories. It is a native of Java, where several different travellers have met with it on the mountains, up to an altitude of about 10,750 feet. Living plants of it have repeatedly been introduced into Europe, but it has always continued very rare in collections, though it is excelled in elegance by no other fern; and its curious shaggy golden brown fur would assure it a conspicuous place. It is impossible to confound this species with any other, the colour of the remarkable fur or felt which clothes the stipes of the fronds is alone sufficient to distinguish it. While yet quite young the plants assume this character. We have seen some fine specimens in Mr. Lindens's establishment, and also in the Botanic Gardens at Brussels, well clothed with the golden fleece described. A single known species appears to develop a similar characteristic. It is a New Caledonian species, of which Mr. Linden has recently received living specimens, and of which we shall have occasion to speak again.

Meanwhile, we are happy to say that late introductions will permit of this handsome rare fern, so desired by true amateurs, being more widely spread. E. A.

Mr. BLEU'S NEW CALADIUMS.

This persevering raiser has just sent out another fine batch of splendid new seedling Caladiums. They can be had from Mr. Linden at the present date. All five varieties described below are first-class. (Editors).

Grétry (B.). — A very handsome and attractive variety, of good habit and elegant form, displaying a wonderful richness and splendid contrast of colours. It is the issue of *C. Maxime Duval* and *C. Auber;* the leaf, which is more elegantly elongated than that of the former, has the same carmine red centre, the colour spreading less over the blade; and its numerous large white spots are from the latter.

Louise Duplessis (B.). — A grand acquisition, the result of a cross between *C. Duc de Ratibor* and *C. bicolor fulgens*, having a leaf intermediate in shape between the two, with brilliant lake nerves and rose-lake outlines, and the transparent white ground is slightly suffused with pink, and traversed throughout with very slender green veins.

Madame Heine (B.). —This magnificent novelty is the issue of *C. Madame Andrieu* and *C. Duchartre*, and is very remarkable for its carmine nerves, which show off the white slightly tinged ground faintly traced with a deep green network, to great advantage.

Minerve (B.). — A lovely variety exhibiting quite a new combination of colours. The large well-posed leaf has the centre and nerves of an extremely bright violet-rose, encircled with a grayish-green, and an outer band of blue-green, the whole thinly spattered with white blotches.

It was raised from *C. Houlletii* and *Madame Andrieu.*

Vicomtesse de la Roque Ordan (B.). — Like the foregoing, this variety delighted all who had the opportunity of seeing it at the shows of Paris and Versailles last year, where it appeared for the first time.

It was obtained from *C. Duc de Ratibor* and *C. A. Bleu,* and was principally favoured by the latter. The deeply peltate leaf is elegantly lengthened out, and has delicate pink nerves forming a pleasing contrast with the opaque snowy white ground, which is prettily laced with bright green.

Alcibiade (B.). — A very large and brilliantly coloured variety, having ample leaves with a scarlet centre and green bordering, thickly spotted with white. Although this plant has very large leaves it combines with them a good habit. *C. A. Bleu,* fertilised by *C. Madame Humbelle* was its parent.

A. Bleu.

DICKSONIA CHRYSOTRICHA, Moore.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, publ.

HORTICULTURAL CHRONICLE.

June, 1875.

— THE SQUARE BAMBOO. — Mr. Ed. Renard recently brought before the French Acclimatisation Society a notice of a new Bamboo, discovered by him on some shooting excursions in the neighbourhood of the town of Osaka, Japan, the peculiar character of which is to have square stems. Mr. Renard never met with it elsewhere in his travels from Canton to Shang-hae, Han-Kéou and Pekin even, although he tried in every way to procure it; but he was assured by Chinese merchants that it existed in the provinces of Ho-nan and Su-tchuen.

Mr. Renard's statement has been questioned; but we can confirm it from ocular demonstration. It attains a height of thirty feet, or more, and has perfectly square stems with slightly rounded angles. Mr. Renard sent some plants of it to Europe, but they arrived at Bordeaux during the war and were lost. However, exertions are being made to reintroduce this singular plant, which will probably prove hardy.

— FRUIT SHOW IN LONDON. — A grand International Exhibition of Fruits is announced to take place in the Alexandra Palace, Muswell Hill. It will be open from the second to the fourth of September.

— ENGLISH EXPEDITION IN THE EAST OF CHINA. — We learn that the expedition for the scientific exploration of south-east China has terminated disastrously, Mr. Margary having been killed, and Mr. John Anderson, the naturalist to the expedition, narrowly escaped from the natives with his life, after abandoning all his collections and instruments. He went thither to Calcutta, and has since arrived in London. Distant scientific expeditions are by no means all pleasure!

— HORTICULTURAL CONGRESS AT BRUSSELS. — At the proposed congress at Brussels in 1876, an important motion will be made by Mr. Morren, namely, the publication of a *Hortus Europaeus,* or systematic and descriptive catalogue of all the plants cultivated in the gardens of Europe. Such a work would be invaluable if properly carried out, and we invite our confreres to be prepared with their suggestions.

— A NEW POTATO DISEASE. — A new, and, we fear, formidable disease threatens the Potato crop in England. It appears to have been first observed in the trial grounds of the Horticultural Society, at Chiswick, where it is reported to have destroyed the entire crop of American varieties. It has also shown itself in various other parts of the Kingdom. The Rev. M. J. Berkeley, the eminent fungologist, is investigating the nature of the disease, which is either caused by fungus growth or the decaying haulm becomes the seat of these insidious organisms. Writers disagree in their reports of the origin and progress of the disease. One asserts that it proceeds from the tubers upwards, whilst another affirms that the sets or parent tubers of diseased plants examined did not present the slightest trace of disease, and could not possibly have been the channel of communication. So far, it appears that the American varieties have been the chief sufferers, but it seems that the English varieties are not exempt, as was at first supposed. It is to be hoped that this will not prove a serious visitation, but its appearance in so many distant localities gives rise to the gravest apprehensions.

— USES OF THE FRUIT OF OPUNTIA. — Mr. Heritte, French Consul at Messina, writes to Mr. Drouyn de Lhuys respecting the uses to which the fruit of the common Opuntia or Barbary Fig might be applied. These reddish fruits are very wholesome and of easy digestion, and their skins, as well as the leaves, serve to fatten pigs. We may also add that a kind of gum is extracted from the *Opuntia,* similar to gum of Bassora. But it is the dyeing properties of the carmine red fruit of the wild Opuntia, which is indelible and cannot be washed off from the hands, to which Mr. Heritte more particularly calls attention. It would be possible to fix this beautiful colour, and as the plant will thrive on rocky barren soil, it might become a renumerative crop where absolutely nothing else will grow.

— PRIZE OF HONOUR TO MESSRS. BALTET BROTHERS. — It is with pleasure we hear that the well known nurserymen, Baltet Brothers, of Troyes, have received a high mark of distinction from the Minister of Agriculture of France. In a special competition they were awarded an object of art for their nurseries. Never was reward more justly merited, and all who are aware of the zeal with which these gentlemen have promoted arboriculture and pomology, and are acquainted with the numerous publications of Mr. Ch. Baltet, will join us in congratulating them on their well-deserved success.

— THE ANEMONES. — In the number of *The Garden* for May 22, Mr. W. Robinson has done for the Anemones what he so successfully tried for the Lilies, namely, a descriptive and cultural review of all the species cultivated in our gardens. This article is illustrated by beautiful wood-cuts representing on a reduced scale the 26 species described, and will prove of great service to the amateur, whom we would advise to peruse it.

— MR. THISELTON DYER AT KEW. — We hear that this learned professor of botany has been appointed assistant Director of Kew Gardens. This choice will have the approval of all those who are aware of the profound erudition of Mr. Thiselton Dyer, and his great success as a lecturer on botany.

— MASDEVALLIA POLYSTICTA. — The *Gardener's Chronicle* of May 22 contains a beautiful figure of this remarkable species from the pencil of Mr. W. G. Smith, representing a fine plant, ornamented with three spikes of flowers, grown by Mr. B. S. Williams. It is undoubtedly the same species as that pourtrayed by us in March last, but the labellum is broader, and the tail-like appendages obtuse, differences too slight to be of any moment. A charming plant.

— ROBINIA SEMPERFLORENS. — In a recent number of the *Revue Horticole* Mr. Carrière describes a curious per-

petual flowering variety of the common Thorn Acacia or False Acacia *(Robinia pseudo-acacia)*. This remarkable variety was obtained by Mr. Durousset, gardener at Genouilly, Saone-and-Loire; the successive production of flowers is constant. This is a great acquisition for our parks and gardens, especially as it is equally as hardy as the type, from which, moreover, it differs very little in other characters.

— The Lilies. — We would recommend reading the excellent illustrated and descriptive article on Lilies in " The Garden „ for April 10, 1875. It comprises all the species known, and is an epitome of Mr. Baker's latest labours in this beautiful genus.

— Gynerium roseum Rendatleri. — On consulting our notes we find that this variety is so much superior to all others in the beauty of its intense colouring, that we cannot too strongly advocate its culture. The month of May, when they have just begun to start into growth, is the best time for transplanting Gyneriums.

— Flowering of Columellia sericea at Kew. — This remarkable and interesting plant has recently flowered in the Botanic Gardens at Kew. It is of more interest to the botanist than to the gardener on account of its peculiar structure, particularly the stamens.

— Atlantic Island Plants. — The valuable and interesting collection of dried plants gathered by the late Rev. R. T. Lowe in the Canary Islands, Cape Verd Islands, etc., are to be divided between the British Museum and Kew Herbariums, the latter taking all single specimens.

— Cordyline indivisa Flowering in the open Air. — According to Mr. J. D. Mitchell, in " The Garden „ this plant was finely in bloom about the middle of June in the nursery of Mr. Simmons, at Falmouth in Cornwall. It has been planted about ten years, and it is about as many feet high. The flower-spike is described as being about 3 feet in length and 2 ½ feet in diameter. Last year we saw specimens of *C. australis* from a plant 14 feet high in Ireland; and there is no doubt of the perfect hardiness of both of these ornamental plants in the south-western parts of the Kingdom. Should an unusually severe winter kill them to the ground they will throw up again from the root.

— The Sumbul Plant. — A fine specimen of *Euryangium Sumbul* about 7 feet high is coming into flower at Kew. It is a biennial with elegantly cut leaves which however it loses when it throws up its flower-stem. It is probably a species of *Ferula*. It yields the Sumbul or Musk Root of central Asia.

— Obituary. — It is with deep regret that we chronicle the death of Mr. Thuret, of Antibes, one of the most distinguished botanists of Europe. This sad news will be received with universal sympathy for his faithful friend and coadjutor, Mr. Bornet. His death happened at his charming residence near Antibes, where we visited him last April, when he was full of health, and it was so unexpected that the whole household was thunder struck. As a cryptogamist, Mr. Thuret had reached the first rank among living botanists, and his discoveries in the reproduction of sea-weeds will retain this honourable position for his name so long as science is cultivated.

Another name, that of Mr. Daniel Hanbury, familiar to almost all botanists in England, and widely known all over the world, has to be recorded in our death roll. It was with painful surprise that we heard of his rather sudden death on April 20, though he had been suffering from fever for some days. He was an enthusiatic horticulturist, and science is greatly indebted to him for his successful efforts in discovering the sources of many valuable drugs and other vegetable products. He did not long survive the completion of the important work on pharmacography conjointly edited by him and Prof. Flückiger, of Strasburg. His genial, amiable disposition will never be forgotten by those who had the pleasure of his acquaintance.

— Destruction of the Phylloxera. — The commission charged with the award of the prize of 300,000 francs, offered by the French Government for the discovery of an effectual and practical remedy against this scourge, has recently decided that it should not be given this year. However, we are told that a remedy has been found, and it is reported to consist of a mixture of sulpho-carbonates, alkalies and manure. Mr. Dumas recently made it public, and it has given rise to much talk. Before long we shall be in a position to judge of its merits.

E. A. and W. B. H.

DENDROBIUM THYRSIFLOROM, Reichb. fil. (?).

P. De Pannemaeker, ad nat. pinx. in fronti Gand.

J. Linden, pu.

CAMELLIA ALBINO BOTTI, Semis d'Italie.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

PL. CCVII.

DENDROBIUM THYRSIFLORUM, REICHB. FIL.

NAT. ORD. ORCHIDEAE.

ETYMOLOGY : from δένδρον, a tree, and βιος manner of life, most of the species growing upon trees.

GENERIC CHARACTER : *sepala* membranacea, erecta v. patentia, lateralibus majoribus oblongis cum basi producta columnae connatis. *Petala* sepalo supremo saepius majora, nunc minora, semper membranacea. *Labellum* cum pede columnae articulatum v. connatum, semper sessile, indivisum v. trilobum, saepius membranaceum, nunc appendiculatum. *Columna* semiteres basi longe producta. *Anthera* bilocularis. *Pollinia* 4, per paria collateralia. — *Herbae epiphytae, nunc caulescentes, nunc rhizomate repente pseudobulbifero. Folia plana, saepius venosa. Flores solitarii fasciculati v. racemosi speciosi.* — E. Lindl. Genera and Species of Orchid. Pl.

SPECIFIC CHARACTER : *pseudobulbi* v. *caules* articulati-elongati erecti apice 3-4 foliati ; *folia* ovato-oblonga acuta nervosa nitida ; *racemi* laterales maximi thyrsoidei multiflori foliis duplo longiores ; *bracteae* minutae incurvae ovato-acatae carinatae scariosae pedicellis multo breviores ; *sepala* ovato-acuta petalis obcordatis patentibus margine incurvatis minora, patentia ; *labellum* rhomboideum unguiculatum retusum limbo patentissimo. — *Flores* candidi labello aureo. — Crescit in India orientali. — E. A.

Dendrobium thyrsiflorum, Reichb. fil. (?) ; quo ?... —

A single glance at our plate will give an idea of the splendour of this species, which is not surpassed in beauty by any Indian Orchid. It is of vigorous habit of growth, and its stems, or elongated, club-shaped, erect, annulated pseudobulbs are cylindrical slightly furrowed, and crowned with three or four lanceolate, acute, shining leaves, flat, or slightly rolled backwards. Each stem bears one lateral drooping thyrsoid spike of flowers, of compact, cylindrical, perfectly regular outline.

The broad spreading flowers have pure white sepals and petals, the latter obcordate, slightly hood-shaped and clawed. The spreading labellum is of a lovely golden yellow, of a darker hue towards the centre.

We have not been able to find any definite information respecting this species, either as to description or date of introduction, being distant from our library at the time of publishing this part, and having only our notes taken in Mr Linden's houses to guide us. Yet we are told that it was named by Dr. Reichenbach some years ago. The only mention of it we have seen refers to its exhibition before the Floral Committee of the Horticultural society of London, in 1870, by Messrs. Veitch, who introduced it, and for which they were awarded a first-class certificate.

We may succeed in completing its history in our next number. Meanwhile we can only offer the preceding description, based upon our notes and sketch and the plate accompanying this article.

E. A.

PL. CCVIII.

CAMELLIA ALBINO BOTTI, ITALIAN SEEDLING.

NAT. ORD. TERNSTROEMIACEAE.

For ETYMOLOGY and GENERIC and SPECIFIC CHARACTERS, see *Ill. Hort.*, under plate 168, 1874.

CHARACTER OF THE VARIETY : An admirable plant with stout wood and handsome foliage ; leaves acutely acuminate, distantly toothed. Flowers among the largest of the genus, regularly imbricated in zones, with obcordate, flat, entire, or slightly emarginate petals, the of a beautiful deep rose in centre, encircled by a marginal band of pure white.

PL. CCIX.

RHEUM NOBILE, HOOKER & THOMSON.

NAT. ORD. POLYGONACEAE.

ETYMOLOGY: from ῥέω, to flow, according to Linnæus, in allusion to its purgative properties, or rather, it is supposed, from *Rha*, the old name of the Volga, near which Rhubarb was found growing.

GENERIC CHARACTER: *flores* hermaphroditi (rarius passim abortu unisexuales). *Calyx* semicorollinus, 6-partitus, persistens, haud increscens, laciniis aequalibus vel alternis paullo minoribus. *Glandulae* vel squamae perigynae nullae. *Stamina* 9 (rarissime 6) intra calyci inserta filamentis subulatis, antheris versatilibus ovalibus introrsis *Ovarium* trigonum. *Styli* 3 (raro 2-4), brevissimi, patuli, stigmatibus depresso-capitatis cuneiformi-reniformibus indivisis laevibus. *Achaenium* samaroideum, alata-triquetrum (raro compressum vel 4-alatum), calycem sibi adpressum longe superans, pericarpio tenui subcrustaceo, alis coriaceis vel membranaceis integris. *Semen* erectum, triquetrum. *Embryo* in axi albuminis farinosi rectus, radicula brevi supera, cotyledonibus foliaceis planis marginibus samarae facies spectantibus. — *Herbae perennes, Asiae occidentalis, mediae et borealis Rossiaeque australis; rhizomate crasso lignescente, caulibus epigeis, annuis, erectis, crassis, fistulosis vel nullis; foliis latis, saepe amplissimis, palminerviis, integris vel laciniatis, ocreis membranaceis vaginantibus laxis marcescentibus haud ciliatis; floribus paniculatis vel spiciformi-racemosis, albidis, roseis vel sanguineis; pedicellis fasciculatis, capillaribus, infra medium articulatis, raro crassiusculis continuis, fructibus junioribus saepius sanguineis, maturis fuscis.* (Meisn. in DC. *Prodr.* XIV, p. 32.)

Rheum, Lin. *Gen.* N° 401.

SPECIFIC CHARACTER: *radix* elongato-fusiformis; *rhizoma* crassum breve, juxta caulem emortuum anni praeteriti emittens recentem simplicem erectum 3-5 pedalem, foliis bracteisque reflexis deorsum imbricatis omnio velatum et columnam conicam referentem; *folia* radicalia rosulata, ovato-oblonga obtusa basi cuneata, magna, viridia, nitida, caulinia orbicularia in bracteas transientia; *ocreae* foliis bracteisque deflexis omnino absconditae, maximae, roseae, demum lacerae fuscescentes; *bracteae* diaphano-membranaceae stramineae bullatae foliis caulinis conformes membranaceae stramineae nitidae supra convexae, superiores rubro-marginatae; *paniculae* breves ocreis magnis roseis inclusae, basi flabellato roseae; *flores* 6 andri et 2-4 gyni, virides, pedicellati, sepalis 6 aequalibus oblongis obtusis; *ovarium* breviter stipitatum; *styli* 2-4, stigmatibus capitatis; *achaenia* compressa vel 3-4 gona, 2-4 alata, pendula, atrofusca, lateribus tuberculatis. — Species pulchra, habitu maxime insignis, in rupibus abruptis regionis Sikkim, in mont. Himalayae orientalis, alt. 13-15000 ped. a cl. J. D. Hooker detecta. — In hortos Europae e semin. vivis allata, anno 1874.

Rheum nobile, Hook. fil. et Thoms. *Ill. Himal. Pl.* t. 19. — *Ill. hortic.* II, misc. p. 88. — Meisn. in DC. *Prodr.* XIV, p. 36.

Nothing could be more appropriate than the term noble applied to this magnificent plant by Dr. Hooker, who discovered it nearly thirty years ago growing on rocky precipices of the lofty mountains of Sikkim-Himalaya. This accomplished botanist relates that he was struck with astonishment at its peculiar monumental aspect, when he saw it for the first time rearing its conical column, as tall as a man, from the crevices of the rocks, at an elevation exceeding 15000 feet above the level of the sea. At first, from the distance, he was unable to recognise what family it belonged to, and he was not a little surprised on approaching it to find that it was a *Rheum*, wholly distinct in habit from all known species of the genus. He brought seeds of it with him to Europe at the same time as the famous Sikkim Rhododendrons, which have immortalised his name as a traveller; but the plant was not to be had in gardens, and it was only last year that a consignment of good seeds added this splendid species to our collections. Its long fusiform root lengthens into a short thick rhizome, throwing up each year a simple erect stem close to that of the preceding season, attaining the height of a man, and probably taller under cultivation. This stem is completely clothed with leaves and imbricated, reflexed bracts forming the column of which we have already spoken. The large radical leaves are ovate-oblong, obtuse, cuneate at the base, of a brilliant shining green, arranged in the form of a rosette.

The cauline or stem-leaves are of the same shape, gradually diminishing in size upwards and passing into similar translucent, membranous, bullate convex bracts, of a pale colour above, the upper ones assuming a beautiful red tinge on the margin. Independently of the colour of the bracts and the flowers, this is a highly ornamental plant, whose characters are given in detail in the preceding latin description.

Considering the great altitude of its native habitat in Sikkim, we may regard it as a hardy plant for our gardens, where we may look forward to seeing it develop its full beauty next year, judging from the flourishing young plants now in Mr. Linden's establishment, which are very promising in appearance.

E. A.

RHEUM NOBILE, Hooker & Thomson.

P. De Pannemaeker, ad nat. pinx. in Horto Lind. | J. Linden, publ.

HORTICULTURAL CHRONICLE.

July, 1875.

— International Exhibition at Cologne. — The English Committee is composed of the following gentlemen: Messrs. W. Burnley Hume, W. B. Kellock, Robert Warner and Dr. Hogg, and from what we hear the exhibition promises to be of a thoroughly international character.

— Botanical Exploration of Celebes. — Dr. E. de la Savinierre will shortly leave for the Celebes Islands for the purpose of making collections of dried plants to supplement the results of M. Beccari's explorations in Borneo and New-Guinea. On his return he will distribute sets in centuries of *Plantæ Celebenses* at the fixed price of £ 2 per 100 species. To commence with, he solicits subscriptions for four centuries, that is £ 8 for a collection of 400 species. Apply to the *Secrétaire général de la société botanique de France, 84, rue de Grenelle-St-Germain, à Paris.*

— Flowering of Tillandsia musaica. — On our last trip to Italy we went by way of Lake Major to visit Mr. Linden's branch establishment at Pallanza, where we saw the beautiful plant in bloom which we published under the preceding provisional name (*Ill. Hort.*, 1873, p. 171). Exactly at the same date it was flowering in Mr. Bull's establishment at Chelsea, and he presented it at the meeting of the Royal Horticultural Society, April 28. But we are much surprised to learn from the English journals that Mr. Bull's plant bore flowers " of a rich orange yellow „ with yellow bracts, whereas our plant had whitish flowers in a bracteate head, with pale green bracts striped with crimson. We shall, however, shortly return to this subject again.

— Exploration of Guatemala. — We hear that Mr. Bunstroem is at the present time in Guatemala collecting plants and insects, at the instigation of a few earnest promoters of science in Belgium. Mr. Morren announces in the *Belgique Horticole* that the first consignment of considerable extent has arrived in good condition.

— Mr. Darwin's new Book. — Mr. Darwin's late studies and investigations have given birth to a new book, published within the last week or two. It is entitled " *Insectivorous Plants,* „ and like all works from the pen of this great naturalist it is destined to cause a sensation. It is published by Murray of London and comprises no fewer than 461 pages with illustrations. We content ourselves with simply announcing its appearance now, reserving a more detailed examination of its contents for a future occasion.

— Discovery of the Resting-spores of Peronospora infestans, the Fungus which causes the Potato disease. — Mr. Worthington Smith has had the great good fortune to discover the resting-spores of the Potato fungus. He made his first communication to the Scientific Committee of the Royal Horticultural Society on July 7, and he has since supplemented it with more complete descriptions and illustrations. For the full particulars we may refer our readers to the *Gardener's Chronicle* for July 10, 17 and 24. Here we have only sufficient space to indicate the nature and importance of the discovery. Until Mr. Smith detected the oospores (resting-spores) of this fungus, it was extremely doubtful whether they were produced in the potato plant at all. Indeed, judging from allied species, it was thought probable that they were not. However, considering the extreme smallness of the oogonia and antheridia it is not surprising that they have escaped observation. This fungus propagates itself in several ways. The spawn or mycelium permeates the whole tissue of the haulm and tubers, and here and there, through the surface hairs and stomates, slender threadlike branches protrude, bearing simple-spores and sometimes swarm-spores.

The former are single terminal joints as it were of the branches, which fall off and vegetate if in a favourable medium. The contents of the swarm-spores developes into what are termed zoospores, minute bodies with a tail at each end, which are endowed with the power of motion for a short time after they are diffused. Both simple-spores and zoospores serve only for the summer propagation or spread of the fungus. The oogonia and antheridia, the former impregnated by the latter giving birth to the oospore, or resting spore, occur in the tissue of the potato plant. It is this oospore that lies dormant through the winter and germinates the following summer and serves to perpetuate this insidious enemy. Mr. Smith has identified the *Artotrogus* of Montagne, which Mr. Berkeley has all along believed to be the missing organ, with the resting-spores he has observed. It is to be hoped that this addition to our knowledge of the life history of the *Peronospora infestans* may render it more easy to prevent its ravages.

— Male Flowers of Keteleeria Fortunei. — Until this year, this handsome Conifer had only borne female flowers, but the mother plant in possession of Messrs. Rovelli of Pallanza, which is the finest specimen in Europe, was this season covered with male flowers, hence we may now reasonably hope that before long an abundant harvest of seed will be the means of bringing this tree into commerce.

— Expedition to the South Sea Islands. — Mr. Ch. Moore, the able director of the Sydney (Australia) botanic garden, has sent a scientific exploring party to visit the Fiji, Caroline and Solomon Isles, New Britain, and perhaps also New Guinea. The vessel was chartered by Mr. W. Mac Arthur, a private citizen of Sydney. A Dane is entrusted with the task of superintending the botanical collections. We trust this spirited enterprise will meet with the success it deserved, and contribute largely to the advance of science.

— Presidency of Comte de Kerchove. — We are gratified to hear that this distinguished amateur has been elected to fill the post of President of the Royal Agricultural and Botanical Society of Ghent, vacant through the death of Mr. Ghellinck de Walle. The society will certainly not retrograde under his patronage and direction.

Horticultural Club in London. — This useful institution is now an accomplished fact. The seat of the society is Adelphi Terrace, Strand, and the Rev. W. H. Dombrain has been nominated president.

— The Fruit Manual. — We have received the new edition of this excellent book from the pen of our friend Dr. Hogg, and can cordially recommend it to all those in any way engaged among fruit trees.

— Obituary. — Mr. William Rollisson, the well known nurseryman of Tooting, died on the 10 of June last, at the age of 73 year. He was one of the good old school of gardeners, combining a sound practical knowledge with a hearty manner, that will be greatly missed by his contemporaries.

E. André and W. B. Hemsley.

PL. CCX.

CROTON (CODIÆUM) BELLULUM, LINDEN & ANDRÉ.

NAT. ORD. EUPHORBIACEAE.

For the ETYMOLOGY and GENERIC and SPECIFIC CHARACTERS, see *Ill. Hort.* 1875, under plate 201.

CHARACTER OF THE VARIETY: *arbuscula* erecta, ramis gracilibus petiolisque roseis; *folia* lineari-lanceolata integerrima basi longe angustata, apice acutiuscula, breviter petiolata, supra medium viridia luteo-punctata, infra utrinque aurea. — E fecundatione adulterina curante amic. L. Linden inter *C. Weismannianum* et *C. cornutum* orta, anno 1874. — E. A.

Codiaeum (*Croton*) pictum, Hook., var. bellulum, Linden and André.

This charming miniature Croton among others is the result of some hybridisations effected a few years ago by Mr Lucien Linden, between the new varieties in commerce at the time. It is a cross between *C. Weismannianum* (male) and *C. cornutum* (female). It is an undershrub of liliputian proportions, erect in habit, having its slender branches tinged with rose pink, as are also the petioles. Its numerous entire linear-lanceolate acute leaves ascend, forming a very acute angle with the stem, or they are sometimes slightly spreading, very much narrowed downwards and borne on short petioles. The upper half of the blade is of a rich dark green dotted with yellow; and the whole of the lower part, as well as the midrib, is of a golden yellow.

In this pretty acquisition we have the characteristics of neither of the parents reproduced, as it has neither the terminal erect horn of the leaf of *C. cornutum*, nor the broad richly coloured foliage of *C. Weismannianum*. It is the very reverse of *C. Andreanum*, another gain of Mr. J. Linden's, recently published in this work, which is the strongest grower of hot-house varieties yet known.

E. André.

CROTON (CODIÆUM) BELLULUM, LINDEN & ANDRÉ.

(Grandeur naturelle.)

...nnemaeker, ad nat. pinx. in Horto Lind. *J. Linden, edit.*

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

EPIDENDRUM PANICULATUM, Reinwardt.

J. Linden, publ.

PL. CCXI.

EPIDENDRUM PANICULATUM, REINWARDT.

NAT. ORD. ORCHIDEAE.

ETYMOLOGY : from ἐπί, upon, and δένδρον, a tree, growing on trees — epiphytal.

GENERIC CHARACTER : *Sepala* patentia, subaequalia. *Petala* sepalis aequalia v. angustiora, rarius latiora, patentia v. reflexa. *Labellum* cum marginibus columnae omnino v. parte connatum, limbo integro v. diviso, disco saepius calloso, costato, v. tuberculato; nunc in calcar productum ovario accretum et cuniculum formans. *Columna* elongata, clinandria marginato, saepe fimbriato. *Anthera* carnosa, 2-4 locularis. *Pollinia* 4, caudiculis totidem replicatis annexa. — *Herbae americanae epiphytae, caule nunc apice v. basi pseudobulboso, nunc elongato apice folioso. Folia carnosa, rarissime venis elevatis striata. Flores spicati, racemosi, corymbosi v. paniculati, terminales v. laterales.* — (Lindley *Genera and Species of Orchid. Pl.* p. 96.)

SPECIFIC CHARACTER : *folia* oblongo-acuminata; *pedunculus* vaginis acuminatissimis membranaceis vestitus; *panicula* composita divaricata, *bracteis* pedicello brevioribus, *sepalis* oblongis, *petalis* filiformibus, *labelli* quadrilobi laciniis posticis brevibus semicordatis obtusis, anticis linearibus divaricatis, callis duobus lineisque 3 brevibus elevatis contiguis.

Epidendrum paniculatum, Reinw., *Fl. Peruv., syst.*, p. 243.

— laeve, Lindl., in *Bot. Reg.*, 1844, p. 17.

This Orchid is rather widely dispersed in the north-west of the continent of S. America. Hartweg found it in Colombia, near Popayan; Linden in Caracas; Funck and Schlim in divers parts of Venezuela; Matthews and Bridges rediscovered it in Peru; and Bridges found it in the north of Bolivia. It is a beautiful plant, varying greatly in the size and shape of its flowers. We saw, and sketched, several very distinct forms in Mr. Linden's establishment, which at first might almost be regarded as distinct species, but we think it wiser to accept Lindley's opinion that they are varieties of a polymorphous species. He distinguished two principal forms of it:

E. p. longicrure with very acuminate leaves, and very long falcate anterior lobes to the labellum, and *E. p. cuspidatum*, leaves oblong, abruptly cuspidate.

A third that we saw in bloom has much larger panicles than the type, and flowers twice as broad, with obtuse lobes to the labellum. Sometimes the panicles attain a large size and are covered with a profusion of more or less fragrant flowers of the most delicate lilac tint relieved with white.

All of them are easily cultivated cool-house plants of tall growth, with long upright stems, which when crowned with their tall flower-spikes are very attractive.

E. ANDRÉ.

NEW BEGONIAS.

The section of Begonias called *incarnata* or *insignis* is still a novelty in horticulture, but it already numbers some beautiful varieties. The type is a native of Brazil. It is a half shrubby plant, whose chief merit is flowering in winter. Mr. Schmidt of Lyons conceived the idea of fecundating it with some of the tuberous-rooted species; and he has had the good fortune to raise a new race of almost continuous-flowering varieties, which will prove of the utmost value as decorative plants. Below we give the names and brief descriptions of some which will shortly be sent out, and to which we direct special attention.

Caroline Schmidt.— Dwarf, good shape and habit; flowers nearly 2 inches in diameter, pure white in a conservatory, but sligthly tinted when exposed in the open air.

Madame Fanny Giron : A strong grower, clusters appearing fairly above the leaves, containing about 15 deep orange-scarlet flowers.

Madame Thibaut : A dwarf branching variety, with numerous salmon-coloured flowers, about 1/2 inches in diameter.

Mons. de Bouchaud de Bussy : An exceedingly free-blooming variety, of good habit; flowers fleshy pink, very clear in colour.

Mons. Henri Truchat : A branching variety with dense foliage; flowers very large, deep rose, shot with violet.

Mons. Louis van Houtte : Vigorous, of good habit, profuse bloomer; flowers of a deep rose.

Mons. Victor Lemoine : An extremely free-bloomer; flowers in clusters of about 15 to 18, rich carmine tinged with violet. An extra variety strongly recommended. Habit perfect; flowers borne above the deep green foliage.

Mr. William Bull : Dwarf with toothleted leaves; flowers large, bright rose with a white centre. Admirable.

The raiser will shortly send out these beautiful plants, and they may be obtained through Mr. Linden, 52, *rue du Chaume, à Gand, Belgique.*

PL. CCXII.

BEGONIA GUNNERAEFOLIA, LINDEN & ANDRÉ.

NAT. ORD. BEGONIACEAE.

ETYMOLOGY: dedicated to Begon, a French patron of botany.

GENERIC CHARACTER: FLORES MASC. *Sepala* 2. *Petala* saepius 2, interdum nulla, rarius 3-7. *Stamina* toro subconvexo vel convexo inserta, nunc toro magis producto vel filamentis concretis plus minus monadelpha, *antheris* plerumque elongatis lateraliter ramis 2 dehiscentibus, nunc abbreviatis aut loculis versus apicem dehiscentibus. FLORES FEM. *Lobi* saepius 6, nunc 3-2, aut 6-8, exterioribus plerumque majoribus. *Styli* 3, rarius 2, rarissime 5-4, basi plus minus coaliti, caduci, bifurcati v. auriculato-bilobi v. subclavati, rarissime (Eupetalum) bifidi cum ramis subdivisis. *Ovarium* externe 3-costatum v. 3-alatum, rarissime 2 aut 4-5-alatum, interne 3-rarius 2-rarissime 4-5 loculare. *Capsula* inaequaliter, rarius aequaliter 3-alata, rarissime 4-6-alata. — *Herbae, suffrutices vel frutices, tubere, caudice vel caule donati; nunc subcarnosi, interdum subscandentes; foliis penninerviis, vel palminerviis, vel nervo medio majore palmipenninerviis, vel peltinerviis, plerumque dentatis saepius indivisis, nunc lobatis, rarius subpartitis; floribus albis roseis rarius rubris, rarissime luteis.* (D C. Prod. XV, p. 278.)

SPECIFIC CHARACTER: *frutex* erectus, caule simplici vel pauciramoso, tereti, ad nodos petiolarum incrassato, cicatrisato, sicut in petiolis et pedunculis in juniorem plantam squamis patulis membranaceis vel scariosis late triangulis albido-roseis dense vestito, lana pubeque ferruginea plus minus incrassata sparsim induto; *folia* basi bistipulata stipulis amplis caducis late ovato-acutis scariosis undulato-carinatis; *petioli* divaricati, robusti, 15 cent. longi, cylindracei; *limbus* maximus, patens, subplanus, oblique orbiculatus lobis mediocribus marginalibus subacutis dentatis, pagina superiore laete viridis rugosula pilis minutis adpressis contortis remotis conspersa, inferiore glabra nervis radiatis pluries furcatis fusco-puberulis; *inflorescentia* in cymas axillares pedunculatas subglobosas decompositas disposita, pedunculis pedicellisque fulvo lanatis bracteatis bracteis scariosis brunneis ovato-cucullatis, *flores* masculi pedicellati, minuti, sepalis 2-ovato-obtusis extus ferrugineo-albidis, petalis 2 subconformibus albis; *stamina* penicillata filiformia: fl. femineos capsulasque haud vidi. — In provincia Antioquia (Paramo de Ruiz prope Tolima) Novo-Granatensium legit Roezl, 1873. Ad. viv. desc. in hort. Lind. — E. A.

Begonia gunneraefolia, Linden et André, Lind. Catal. 93, p. 3.

This Begonia, one of the handsomest of the genus in its upright arborescent habit, and enormous leaves — which caused us to compare it to a *Gunnera*, was discovered by Mr. Roezl in the province of Antioquia, New-Grenada, who sent seeds only of it to Mr. Linden some years ago. Its ample foliage at once struck us; and Mr. Triana, the accomplished New-Grenadian botanist, whom we consulted in the matter, thought at first it must be the *B. parviflora* of Poeppig, which he himself had rediscovered near Tuquerres, in the south of N. Grenada. Curiously enough, too, before he had identified his specimen with the *B. parviflora* of Poeppig, he anticipated us in selecting the name of *gunneraefolia*. However, his plant proved to be the same as Poeppig's collected at Pampayaco, in Peru, and since found by various travellers in different parts of the eastern Cordillera; but a careful comparison with Dr. Triana's specimens, and those in the collection of the Paris Museum, shows that our plant is very distinct, differing in some very decided characters. The lobed leaves of *B. parviflora*, in the way of *Ricinus*, its woolly young leaves, and more especially the absence of scales, are very characteristic of our plant species. Nevertheless it belongs tothe arborescent section, of which Poeppig's *B. parviflora* is a member, and of which *B. arborescens*, Raddi, and *B. Hookeriana*, Gardner, are the handsomest representatives.

There are several undescribed species in herbariums that are closely allied to *B. gunneraefolia*. For instance, a beautiful plant collected by Weddell in the Sierra d'Estrella, Brazil, bearing the number 865 in the herbarium of the Museum of Paris. It differs from ours, independently of the country, in its more deeply lobed leaves, and in its petioles, peduncles and under surface of the leaves being clothed with a thick russety golden tomentum, and the upper surface of its leaves is covered with glandular hairs. Another, found by Mr. Claussen at Novo-Friburgo, in the province of Rio Janeiro, Brazil, in November, 1842 (N° 26, *Hb. Mus. Par.*), also comes near *B. gunneraefolia*, but it is distinguished by the shorter scales on the petioles, glabrous peduncles, 9 or 10 inches long, and by the oval acute bracts of the pedicels being clothed with a fawn-coloured tomentum. In our plant the pedicels are covered with large oval membranous bracts. The unique specimen, to which we allude, is, however, near ours and might be called *B. Claussenii*, Ed. André, in memory of the botanical collector and geologist who for twenty years traversed the province of Minas Geraes in Brazil and enriched our herbariums with numerous valuable new species.

Begonia gunneraefolia, for the characters of which we refer to the preceding Latin description, will prove of great value as an ornamental stove plant, its fine large leaves being disposed in a similar manner to those of *Coccoloba pubescens*. We know only one species, *B. Boiviniana*, A. D C., an admirable plant from Madagascar, which has not yet been introduced, that surpasses ours in the size of its leaves. We have already seen growing leaves of *B. gunneraefolia* sixteen inches in diameter. On the other hand, the flowers are relatively insignificant.

E. ANDRÉ.

BEGONIA GUNNERÆFOLIA, Linden & André.

P. De Pannemaeker, ad nat. pinx. in Horto Lind. J. Linden, publ.

HORTICULTURAL CHRONICLE.

August, 1875.

— LETTER FROM Dr HOOKER. — A short time ago we received an interesting letter from Dr Hooker, from which we extract the following items of news relating to Kew Gardens.

" The *arboretum* and *fructicetum* at Kew increase in importance from year to year. We are rapidly progressing and I hope to complete them next year. Afterwards the nomenclature must be thoroughly revised, the numerous vacant places, caused by the death of various species, filled up, and certain *desiderata* obtained from some of the Botanic Gardens of Europe. The new *Pinetum* is also in a satisfactory condition.

" Hitherto I have been too busy to finish my report for 1874, but you will get it in the course of a few days. The Government has associated Mr. Th. Dyer with me as assistant director, so that I hope soon to work up all arrears.

" We have lately sent off 16 Wardian cases to various parts of India, containing plants off the best varieties of Coffee, procured from Cape Coast, where the best sort known are cultivated. „

This last sentence embodies some valuable information, which colonial Governments should not be slow to utilise. The superior varieties cultivated in Liberia and on various parts of Cape Coast, in equatorial western Africa, might be advantageously employed to replace the older ones in the West Indies, and other regions where coffee is extensively grown.

— CONGRESS OF GEOGRAPHICAL SCIENCE. — The Exhibition in Paris of objects connected with the science of geography was opened with great ceremony on the fifteenth of July. The rich and varied display indicates the enormous strides that geography has made of late, and the importance of this grand science in its relations to all other branches of learning.

The opening meeting of the International Geographical Congress was held on the first of August, in the large state saloon of the Louvre. The ceremony, at which we were present as a member of the Congress, was very imposing. Monsieur de la Roncière le Noury, minister of the marine, presided. The delegates from various countries each spoke in his own language, giving an account of the progress of geography in different parts of the world. On the morrow and following days the Congress was divided into seven sections, proceeding with their several labours. At the time we are writing they are actively engaged, and we postpone until next month a summary of their labours which bear upon the natural sciences.

— EXPLORATION OF PARAGUAY. — News of the expedition conducted by Keith Johnston has reached Europe. With Mr. Johnston are associated Mr. Ch. Twite, a geologist, and Mr. Balansa, a botanist. Notwithstanding that the Paraguayan government has failed to fulfil its promises, these gentlemen will carry out their project. In the first place they went to the town of Assuncion, and from thence they travelled southward, towards the Parana, which they reached near Ytapua. Johnston continued his travels, going up the Paraguay, in order to reach the Cordillera by land, traversing Concepcion. But since that date we know nothing of Mr. Balansa's movements, whose first step, it is reported, resulted in the discovery of the famous new Water Lily, of which he sent seeds last year to Europe.

— POMOLOGICAL CONGRESS AT GHENT. — It is announced that a large number of persons have signified their intention to take part in the proceedings of the Congress. His Majesty the King of the Belgians offers a large gold medal for competition in the exhibition; and several amateurs will throw open their gardens to members of the Congress. Foreigners, too, may be sure of enjoying a hearty reception. The opening meeting is fixed for Sept. 20, at eleven o'clock. The exhibition will last from sept. 19th. to the 24th. The programme is very comprehensive, embracing 71 classes, divided into seven sections : Various Fruits, Pears, Apples, Stone Fruits, Grapes, etc. The prizes include twelve gold medals. Communications should be addressed to *Monsieur F. Burvenich, secrétaire de l'exposition, à l'École d'Horticulture de l'État, à Gand*, Belgium.

— EXHIBITION OF ROSES AT LYONS. — The prefect of the Rhône has refused to accord his permission to hold the show announced in a former number of this journal.

— EXHIBITIONS IN THE UNITED KINGDOM IN SEPTEMBER. —

1. — Royal Horticultural Society, south Kensington. Meeting of Fruit and Floral Committees.

2, 3 and 4. — Great Fruit show at the Alexandra Palace. Manager, Mr. Makenzie.

7. — Crystal Palace, Fruits and Flowers.

8. — Glasgow and West of Scotland Horticultural Society, Autumn Show. Sec. F. G. Dougall, 167, Canning-street, Glasgow.

8 and 9. — Brighton and Sussex Horticultural Society's Show. Sec. Edward Carpenter, St. James's street, Brighton.

13 and 14. — Carnation Show at the Botanical Gardens, Old Trafford, Manchester.

15 and 16. — Royal Caledonian Society. International Fruit and Flower Show in Edinburgh. Sec. J. Stewart, 5, Alva street, Edinburgh.

— CONTINENTAL EXHIBITIONS. — The Horticultural Associations of Lyons will hold a Show of Plants, Flowers, Fruits, Vegetables, and Objects of Art and Manufacture, connected with gardening on the 9, 10, 11, 12 Sept. 1875, in the Place Morand, at Lyons. Address *Monsieur Bergeron, 20, rue du Chapeau rouge, à Lyon-Vaise, France.*

The Horticultural Society of the Seine and Oise will open an Exhibition at Versailles on Sept. 19, which will remain open until the 21.

We may remind our readers that the Exhibition at Cologne, to which we have alluded several times, is open from Aug. 23 till Sept. 26.

— Economical labels. — Recently we directed attention to the improvements effected by Mr. Girard-Col, of Clermont-Ferrand in his garden labels. One of the principal obstacles in the way of their general use was their high price, which put competition with the much cheaper wooden labels out of the question. But this obstacle has been removed. Mr. Girard-Col writes that he has been able to lower the prices materially, and is now prepared to furnish the zinc-parchment labels from four shillings per thousand, and above. We strongly recommend gardeners to give them a trial; and we confidently predict that these labels will soon supersede all others.

— Stipa pennata. — Mr. Földessy, seed merchant at Buda-Pesth, Hungary, collects and dries the feathery inflorescence of this elegant grass on a large scale. It is exceedingly abundant in the plains of Hungary; and Mr. Földessy supplies it at the rate of about eighteen pence per pound. A case of 50 kilogrammes (110 lbs. 5 ozs. 10 drms.) costs £ 8.

— Flowering of Yucca gloriosa in Scotland. — A correspondent of *The Garden* says that there are two plants of this *Yucca* now in flower in the gardens at Hawkhill Lodge, Largs, Ayrshire. One of the plants is 14 feet 3 inches high, and has over 1,300 flowers on it. This plant is more than thirty years old, and has never flowered before.

— The Potato-disease and the Fruit Crop in the United Kingdom. — The Potato-disease this season is widely spread, and like by to prove very disastrous. On the other hand, the fruit crop generally is above the average, and many kinds are extremely abundant.

— " The Floral „ manure. — There has been a great deal of talk lately about this new manure, which is intended more especially for ornamental plants. When it was first introduced it was so highly puffed that cultivators fought shy of it. Nevertheless, it would appear from many communications we have received that it really produces remarkable results. Those desirous of giving it a trial should apply to *Monsieur A. Dudouy et Cie, 38, rue Notre Dame des Victoires, Paris.*

— Obituary. — France, and, indeed, Europe, has just lost one of its brightest ornaments in the horticultural world. André Leroy of Angers is dead; and his funeral on the 26 July was attended by a large and sympathetic concourse of his fellow citizens. His nurseries had a world wide reputation for the splendid collection of trees and shrubs they contained. For three quarters of a century his name has been identified with one of the best and largest horticultural establishments in the world. He was 73 years of age, and succeeded his widowed mother. The fruit-tree department of his nurseries furnished the material for his magnificent and admirable *Dictionnaire de Pomologie,* which only awaits the elaboration of the Stone Fruits to be complete.

And his collection of forest and ornamental trees was unrivalled, without which, and his generous hospitality, the *Dendrologie* of professor K. Koch would never have seen the light. The influence he exercised in his own neighbourhood was remarkable; he created a distinguished horticultural world around him by his personal example and encouragement. A chevalier of the Legion of Honour, director of the Angers branch of the bank of France, and correspondent of the Central Horticultural Society of France, he was the honour and pride of his countrymen; and he succeeded in wresting the palm of horticultural preeminence from Orleans, to secure it for the advantage and profit of the city of Angers.

We enjoyed the honour of being received by this father of gardening last year, and we recall the pleasures of a prolonged visit, passed with him in viewing the treasures, of his beautiful nurseries. It is at the same time a sad and a rich reminiscence; and we wish to pay our tribute of respect to the venerable pioneer of modern arboriculture.

Mr. Boreau, professor of botany and director of the botanic garden at Angers, died a short time before Mr. A. Leroy, at the age of 72 years. He is widely known by his excellent *Flore du centre de la France;* a work of considerable extent, which first appeared under the auspices of Comte Jaubert, but quickly reached a third edition. Formerly he was a firm supporter of Jordan in his views respecting the limitation of species, and the third edition of his work bears too strong evidence of this fact; but latterly his opinions on this subject underwent considerable modification; and we awaited with lively interest the appearance of a supplement to his publications on the botanical region which he knew so well.

He was our first botanical teacher, and we have always been honoured with his personal friendship, the remembrance of which will not fade from the heart of a faithful and grateful scholar.

E. André.

P. De Pannemaeker, ad nat. pinx. in lapide Lith.

ASTROCARYUM MURUMURU, Martius.

J. Linden.

PL CCXIII.

ASTROCARYUM MURUMURU, MARTIUS.

NAT. ORD. PALMACEAE.

ETYMOLOGY: From ασρον, star, and καρυον, nut.

GENERIC CHARACTER: *flores* monoici (recentes suavissime fragrantes) in eodem spadice spatha simplici fusiformi ventre aperta lignescente cincto: Masc. in superiore ramorum parte dense in alveolis sessiles: *calyx* exterior 3 partitus vel 3 fidus tener basi pro trajicientibus vasis pervius, laciniis 3-angularibus erectis, interior 3-partitus vel sub 3-sepalus, laciniis oblong lanceolatis erectis membranaceis vel basin versus carnosiusculis. *Stamina* abortu 6 ex imo calyce interiore orta, sepalis internis per paria opposita rara plura plerumque parum exserta (inclusa Endl.) filamentis filiformibus (vel e basi lata subulatis) erectis, antheris lineari-subsagittatis dorsifixis incumbentibus. *Ovarii* rudimentum minimum, styli vix ulli (nullive) stigmatibus 3 in corpus flocoso-gelatinosum conicum v. lobatum confluentibus. Fem. infra masculorum spicas solitarii in rhachi vel in pedunculi parte dilatata sessiles bractea marginali duplici obvoluti; *calyx* exterior urceolatus obiter 3-dentatus pergameneus nervosus siccinsculus; interior urceolatus-carnosus, ore contracto subtridentato tandem irregulariter 3 fido intus basi in annulum membranaceum elevatus, uti exterior foramine orbiculari pervius. *Ovarium* ovatum, loculis 2 rudimentariis 1-loculare; *stylus* 1 (crassus ovario subattenuatim continuus), stigmatibus 3 (distinctis) subulatis (in planta praesertim subtrigonis intus papilloso-venosis). *Drupa* ovata vel subglobosa, apice rostrata, monosperma, carne crassiuscula valde fibrosa, putamine osseo vertice triporoso. Nuclei testa venosa. Albumen aequabile corneum album centro cavum. Embryo intra porum apicalis. — Palmae mediocris altitudinis rarius acaules locis silvaticis humentibus sparse vel subcaespitosae degentes. Caudex, exceptis annulis, undique aculis validis atris horridus. Frondes omnes terminales, pinnatae; pinnis linearibus, approximatis, aculeato-ciliatis. Spadices simpliciter ramosi, aculeis vel setis horridi, saepius albo-tomentosi, spathis lignescentibus aculeatis inclusi, inter frondes persistentes. Flores masculi flavescentes, densi, spicati, profunde immersi; feminei virescenti vel ochroleuco-pallidi. Drupae flavae vel aurantiacae, fibroso-carnosae, calyce persistente stipatae, inermes vel spinulosae. (Kunth, *Enum. Plant.* pl. III, p. 271, char. em. *Ill. hort.* IV, t. 138; Walp. *Ann.* V, p. 850).

Astrocaryum, G. F. W. Meyer.

SPECIFIC CHARACTER: caudescens, elatum, aculeatissimum; pinnis lanceolatis, subfalcatis, subtus argenteis; florum masculorum bracteis glabriusculis; femineorum subsessilium calycibus glabris, quam corollae hirtae duplo brevioribus; drupis pyriformibus, spinulosis. Mart. — In sylvis primaevis provinciae Paraënsis, praesertim locis udis. In insula Marajó frequens. — Caudex 10-20 pedalis. Frondes 10-12 pedales; pinnis in quovis latere 30-40 et pluribus. Spadices 3-4 pedales. Spatha subbipedalis, sulcata, extus setis fuscis hirta et subinde aculeis nonnullis armata. Flores masculi pallide ochroleuci. Drupa duos pollices longa, vertice rotundato impresso, inaequaliter pentagona, miniata, sapore suavi, odore recente fere moschi, demum melonis. Incolae fructus in deliciis habent. (Kunth, *Enum. Pl.*, III, p. 272).

Astrocaryum murumuru, Martius, *Gener. et Spec. Palmar*, p. 78, t. 58, 59.

This splendid Palm is a native of Brazil and Guyana, inhabiting damp places and the banks of rivers. Its trunk attains a height of 20 to 25 feet, or more, and is quite covered with spines, and bears enormous leaves 10 to 12 feet long, consisting of 30 to 40 pairs of lanceolate slightly curved leaflets. The spadices exceed a yard in length, and are at first sheathed in spathes about 2 feet long, clothed with brown bristles and prickles. The corolla of the female flowers is also bristly. The fruit is pear-shaped and covered with small prickles, red in colour, and about 2 inches long. The Indians are very fond of it, as it possesses a pleasant musky flavour, recalling that of the melon. The specific name is the Indian appellation.

This fine species is exceedingly rare in the hot-houses of Europe, but its beautiful habit and large foliage will ensure it a prominent place in choice collections. E. André.

PL. CCXIV.

CYPRIPEDIUM PARISHII, REICHB. F.

NAT. ORD. ORCHIDEAE.

For ETYMOLOGY and GENERIC CHARACTER, see *Ill. Hort.* 1874, under plate 183.

SPECIFIC CHARACTER : *folia* latissime lorata apice inaequali biloba, recurva, *pedunculus* velutinus, puberulus quinqueflorus secundiflorus; *bracteae* vaginatae spathaceae obtusae ovario pedicellato velutino piloso breviores; *sepalum dorsale* cuneato-ovatum acutum dorso unicarinatum; *sepalum inferius* subaequale, minus, dorso bicarinatum; *petala* ligulata, basi undulata, apicem versus angustata, apice spatulata velutina lobulis pilosis hinc inde 2-3 in quovis petalo; *labellum* cuneatum canaliculatum unguiculatum, sacco utrinque abrupto angulato; *staminodium* triangulum, antice bilobum, lobo utroque intus angulato, seu triangulo (nunc apiculo in fundo sinus), basi cornutum. (Reichb. f.). — In Burmah, legit Rev. Parish.

Cypripedium Parishii, Reichb. f. *Gard. Chron.* 1869, p. 814, id. in *Flora*, june 1869. — *Botan. Mag.* 1869, t. 5788.

This beautiful Orchid is one of the Rev. C. Parish's finest discoveries; he found it on the Siamese frontier when returning from Burma, but the precise locality is not indicated. The history of this plant is remarkable. The bold traveller had collected an enormous quantity of new and rare Orchids, and was returning to Moulmein, two elephants bearing his rich booty, when those animals suddenly disengaged themselves of their burthens and trampled them under foot. The poor plants were thus crushed to a pulp, with the exception of a few specimens which were sent to England; and among those saved from the wreck was *Cypripedium Parishii.*

It is a superb species with broad ligulate recurved leaves, unequally 2-lobed at the summit. The peduncle is velvety, about two feet long, bearing a cluster of five handsome flowers on its apex. The accompanying bracts are triangular or oblong, clothed with a soft tomentum, and shorter than the velvety ovary. Upper sepal wedge-shaped, oblong, acute, with a prominent keel on the back. Lower sepal smaller, 2-keeled. In colour they are of a nankeen yellow with veins of a deeper tint, green outside. Petals linear, stripe-shaped, waved at the base, and densely velvety upwards, greenish at the base with numerous black or brownish dots, some of which are callous, port-wine colour in the upper part. Labellum channelled, clawed, with a conical leg abruptly angular on both sides. Staminode triangular, furnished at the base with two teeth, diverging upwards, green on the disk and white on the edges. Stigma rounded.

In shape the flower is like *C. Lowi,* but the petals are spreading and bent downwards. The callosities on the petals are very curious, being beset with hairs arranged in a stellate manner.

This species is as easily cultivated as most of its congeners, and it is a valuable addition to those already known in this beautiful genus.

E. ANDRÉ.

PL. CCXV.

VRIESEA (?) FENESTRALIS, LINDEN & ANDRÉ

NAT. ORD. BROMELIACEAE.

For ETYMOLOGY and GENERIC CHARACTER : see *Ill. Hort.*, 1875, under plate 200.

SPECIFIC CHARACTER : *folia* rosulata, circiter 30 cent. longa, 6 cent. lata, erecto-recurva canaliculata basi dilatata, marginibus integerrimis parallelis, apice obtusa mucronata mucrone obliquo triangulo acuto retrorsum dejecto, viridia, medium et apicem versus venis reticulato tessellatis perluciditate percipiendis ornata, ad basim et apicem maculis v. guttis sanguineis ocellatis notata,.... cætera desiderantur. — In Nova-Granata, 1872. — Ad viv. desc. in hort. Lind. — E. A.

Vriesea (?) fenestralis, Linden et André, *sp. nov.*

Three years ago this lovely Bromeliaceous plant was imported from New Granada, and we have watched its development in Mr. Linden's establishment with great interest. At first we proposed giving it the name of *ocellata*, in reference to the purple ocellated blotches at the base of the young leaves; but as the plant grew it assumed a more decided character. It comes near *V. tessellata* and *musaica*, from which, however, it is distinguished by several other particulars in the foliage, besides that already pointed out. The beautifully reticulated network of the venation of the leaves reminded us of the curious aquatic from Madagascar, called *Ouvirandra fenestralis*, and suggested the specific name we have given to our plant.

Unfortunately it has not yet flowered and therefore we are not quite sure that it really belongs to the genus *Vriesia*, although it has the general appearance of one. In this respect it is in the same condition as *V. musaica*, *tessellata*, *guttata* and *sanguinolenta*, all of which we have described in this magazine under provisional names.

E. ANDRÉ.

CYPRIPEDIUM PARISHII, Reichb. f.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, pu.

VRIESEA (?) FENESTRALIS, Linden & André.

P. De Pannemaeker, ad

HORTICULTURAL CHRONICLE.

September, 1875.

— Prizes of the French Acclimatisation Society. — In the account of the last distribution of rewards by the *Société d'Acclimatation de Paris,* we find the following record of prizes awarded in the interest of horticulture and botany: To Messrs. Morin and Vinson a prize of £ 60 for their successful cultivation of Cinchona Trees in the Isle of Bourbon.

To Mr. J. Triana a prize of £ 12 for his admirable work on Cinchonas.

Medals of the First Class to the Rev. Fathers of the Holy Ghost, Bourbon, for assistance rendered by them to Messrs. Morin and Vinson; Louis Faton for superior cultivation of various plants at Geneva; Leo d'Ounous, ditto at Laverdun, Ariège; Vicomte de Pulligny, Eure, for the cultivation of useful trees over an area of about 150 acres; and Joseph Vickers for the introduction of living plants of Cinchona in Bourbon.

— Philadelphia International Exhibition. — We cannot too warmly commend this colossal exhibition to the consideration of our readers. Trees sent from Europe should be despatched in time to arrive at the latest by the middle of April in Philadelphia.

For information of every kind, independent of that afforded by the agents in Europe, application should be made to Mr. C. H. Miller, chief of the Bureau of Horticulture, Philadelphia, U. S.

— Peperomia resedaeflora. — Mr. Robinson says in the *Garden* one of the prettiest and rarest of all bouquet and button-hole flowers is *Peperomia resedaeflora* (Linden and André). This plant bears tiny spire-like spikes of white flowers at the apex of pink stems, the lower portions of which are clothed with small velvety leaves.

— Mr. Riley in France. — Mr. Riley, the celebrated American entomologist, so favourably known by his writings on the Phylloxera, the Yucca Moth, and other insects engaging the gardener's attention, is now in France. He is spending his time chiefly in the Hérault among the vine-growers who have suffered so severely from the scourge, giving them excellent advice respecting the management of their infested vine-yards, and information as to the best American varieties that merit a trial. The Agricultural Society of Hérault have given a banquet in his honour at Palavas.

— Exhibition at Brussels in 1876. — We remind our readers that the Grand International Horticultural Exhibition will take place at Brussels in April, 1876. A Congress will be held simultaneously. The royal Society *Flora* will pay for the freight of plants on the Belgian railways; and it is expected that this, the hundredth exhibition of the Brussels Society, will be an exceedingly brilliant affair. Communications should be addressed to *M. Lubbers, secrétaire, au Jardin botanique, à Bruxelles.*

— Wellingtonia gigantea pendula. — Our Belgian contemporaries have reproduced a note, which originally appeared in the *Gardener's Chronicle,* to the effect that a weeping variety of the Wellingtonia had been found at Chatsworth, recommending its propagation. Most likely they had overlooked our announcement of the existence of *W. gigantea pendula* in last year's volume of the *Illustration Horticole.* This variety has now been in commerce for some time, having been sent out by Mr. Paillet, nurseryman at Chatenay, near Sceaux, Seine.

— Hardy Cacti. — We have frequently called the attention of our readers to the hardiness of *Opuntia vulgaris,* which has this season flowered and fruited to perfection in our garden at Touraine, not suffering the least from our winters. We still believe that the supposed species, *O. Rafinesquiana,* in spite of all that has been said about it, is not specifically different from the one mentioned.

But this is not the only *Cactaceae* hardy in this part of France, and under favourable conditions in the milder parts of England. We recommend amateurs to associate with it in the rock-garden *Opuntia bicolor, Echinocactus viridiflorus* and *E. phoeniceus,* with white spines, three species which we have been assured are equally as hardy as *O. vulgaris.*

— The grapes of Canaan. — The largest bunches of grapes ever seen in England, and perhaps even in the whole world, were recently shown at Edinburgh. One of them of the variety called *Raisin de Calabre,* weighed 26 pounds 4 ounces, and another of the *White Nice* variety was within an ounce of 26 pounds. The first was grown by Mr. Curror, gardener to Mr. Douglas of Eskbank, Dalkeith; and it was a handsome well-formed bunch, the berries being well-ripened aud of good flavour. The other cluster was exhibited by Mr. Dickson, gardener to Mr. J. Jardine of Arkleton, Glasgow. Truly these enormous bunches bring to mind the grapes of the land of Canaan, which Poussin represents as being carried on a pole by two men.

— Exhibition at Cologne. — This exhibition was opened on the 24 Aug., to be continued into September. At the time of writing we possess no particulars, but we learn through the *Gardener's Chronicle* of Aug. 26, that in spite of all efforts the show leaves to be desired from a horticultural point of view. Indeed, without the important exhibits from England, and particulary from Belgium, horticulture strictly would have been poorly represented. At the last moment we hear that the *First Prize of Honour* has been awarded to Mr. J. Linden of Ghent.

— Flowering of sumbul. — Recently *Euryangium sumbul* has flowered in the Royal Gardens, at Kew, for the first time in England. It is an interesting plant on account of its producing the *Radix sumbul* of the Pharmacopaea. It was introduced into Russia about 1835 as a remedy against cholera, and a substitute for musk. It was admitted in the English pharmacopaea in 1867 and is prescribed as a tonic stimulant. The first plants were sent from the

mountains of Maghian, east of Samarkand, and some of them flowered as long ago as 1869, in the Botanic Garden at Moscow.

— Prohibition of the importation of plants into Algeria. — The President of the French Republic has followed the Italian government in promulgating a decree prohibiting the introduction in Algeria, not only of vines, but also of fruit trees and other plants, from any source whatsoever. We pointed out in the case of Italy the absurdity of such a measure, and we trust that the executive will soon perceive the policy of removing such restrictions on trade, especially as good rather than harm is likely to result therefrom.

— A horticultural romance. — Quite recently Mr. Harry Turner, son of the skilful florist of Slough, was married to Miss Elisabeth Poole, of Camden Town. But an interesting fact in connection with the event deserves recording. A few years ago, when the young couple met, Mr. Harry offered an orange to the young lady, who ate the fruit and sowed one of the pips. From that seed a plant grew up; and it was the same shrub that furnished the coronet of orange-flowers that adorned the brow of the bride at the Savoy Chapel.

— Eryngiums for the subtropical garden. — In common with several of our colleagues we protest against the term sub-tropical, though we are obliged to employ it to make ourselves intelligible. It is a pity that some more appropriate designation for groups of plants with noble foliage has not got into use, especially when perfectly hardy species are in question, because the objectionable term is misleading. But like the yet more absurd " Foliage Plants ", it finds a place not only in catalogues, but in nearly all horticultural papers, and therefore there in little chance of ridding ourselves of it. The Eryngiums in question have given rise to the foregoing protest, for, like many other plants of noble habit and ornamental foliage, such as various species of *Yucca, Bambusa, Polygonum, Rheum, Gunnera, Aralia, Ferula, Heracleum, Acanthus,* etc., etc., they are nearly or quite hardy in well-drained soil, in the south and west of England, at least. The genus *Eryngium* is very numerous in species, some of which, *E. Bourgaei,* alpinum and *amethystinum,* for example, are familiar; but there is a group of species from the temperate parts of south America of much grander aspect. Several of these may be seen at Kew, and in France we learn that they are being extensively propagated by some of the parisian nurserymen for ornamental purposes. They have long, prickly, involute leaves, with parallel nerves, resembling those of some of the larger growing Bromeliaceae. *E. pandanifolium,* for instance, has leaves, when luxuriant, 6 or 7 feet long, and a candelabrum-like inflorescence, 10 or 12 feet high. These plants retain their beauty throughout the autumn, and will, we think, prove of great value in gardens where there is little convenience for housing truly tropical and subtropical plants. The best species in cultivation are *E. pandanifolium, Lassauxii, paniculatum* and *eburneum.*

E. A. and W. B. H.

CROTON HASTIFERUM. LINDEN & ANDRÉ.

P. De Pannemaeker, ad nat. pinx. et chromolith.

J. Linden, pu.

DRACÆNA WAROCQUEI, LINDEN & ANDRÉ.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

PL. CCXVI.

CROTON (CODIÆUM) HASTIFERUM, LINDEN & ANDRÉ.

NAT. ORD. EUPHORBIACEAE.

For ETYMOLOGY, etc., see *Ill. Hort.* plate 201.

CHARACTER OF THE VARIETY : omnia *Codiaei picti* Hook., exceptis foliis trilobatis, medium versus constrictis lobis lateralibus magnis obtusis medio elongato supra lanceolato apice obtusiusculo, pagina superiore intense viridi, nervis maculisque raris luteis ornata, inferiore pallida. — In insulis *Salomon* Oceaniae meridionalis lusu naturae sponte nata varietas. In caldariis cl. Lindeni gandavensibus allata, anno 1874. — Ad viv. desc. — E. A.

Codiaeum pictum, Hook., var. hastiferum, Linden and André.

We had the good fortune to see for the first time the curious varieties of Croton with trilobate leaves, one of which is here figured, at the international exhibition of Florence in 1874.

An Australian botanist M. C. Moore had brought them to Europe, safe and sound, after much trouble and an almost interminable journey; and he exhibited them to a few favoured amateurs.

Indeed the Crotons hitherto brought out, and introduced in the first place by Mr. J. G. Veitch from the South Sea Islands, are remarkable, as we recently observed, for the modification of the midrib and variety of colouring, rather than for variation in the profile of the blade of the leaf, which is almost invariably entire. One alone, *C. irregulare,* showed a tendency to form leaves whose margins were not parallel to the midrib. The *C. spirale,* introduced by Mr. Bull, notwithstanding the spiral shell-like contorsions of its limb, is of regular shape when untwisted.

The race of varieties now under consideration are quite different from any other; and it is already represented by a considerable number of varieties. We have seen at least half a dozen, all with trilobate leaves, the limb being more or less elongated, exceeding a foot in many varieties. In colouring they are not surpassed by the varieties previously introduced, and we greatly admired their diverse tints of green, pink, red, purple and yellow.

We are happy in the pleasure of congratulating Mr. Linden on being the first to show us living specimens of this group of crotons, destined to effect a great revolution among amateurs of plants with fine foliage.

Ed. André.

PL. CCXVII.

DRACAENA WAROCQUEI, LINDEN & ANDRÉ

NAT. ORD. LILIACEAE, ASPARAGINEAE.

For ETYMOLOGY, etc. consult previous volume.

Character of the variety. — A dwarf stout plant of robust habit. Leaves shortly petiolate, ovate-acute, primarily erect, afterwards spreading and curved downwards, of a beautiful deep green striped and bordered with broad bands of the most beautiful carmine; petioles cylindrical with the exception of a channel above, striped with violet-purple, dilated at the base. This variety is remarkable for the elegant shape of its leaves.

Introduced from the Salomon Isles, Polynesia, into Mr. Linden's establishment, and dedicated to Mr. A. Warocqué, a distinguished amateur of horticulture, whose park and gardens form one of the most attractive sights in Belgium.

Ed. André.

PL. CCXVIII.

NEW HYBRID GLOXINIAS.

OBSERVATIO : cum de hybrida planta versatur, Etymologiam, Characteres Genericos et specificos occasio non adest exponendi.

CHARACTERS OF THE VARIETIES PORTRAYED :

Madame Duval. — Flowers nearly 2 ½ inches in diameter, with obcordate lobes, waved at the margin, of a velvety carmine-red or crimson, passing into pink at the circumference and shaded with dull red in the throat, which has a white ground spotted with red. A superb variety, of perfect shape; perhaps the finest red in the group.

Phèdre. — Flowers perfect in shape, about 2 inches in diameter, of a violet-blue, paler towards the margin of the lobes, with a darker ring suffused with fiery red at the mouth of the tube.

Colore nova. — Flowers nearly 2 ½ inches in diameter, of a deep brown red or claret colour, paler towards the centre; throat white. A new colour in Gloxinias.

La Rosière. — Flowers beautifully formed, about 2 inches in diameter, pure white with a half-circular ring of delicate pink in the centre, radiating in lines corresponding to the lobes, and bordering the lobes. A handsome and free flowering variety.

Papillon. — Flowers large of a beautiful lavendar blue, rayed, dotted, and veined with a deeper tint, forming a new design, which recalls the markings on certain butterflies with blue wings.

These five fine varieties were raised from seed by Mr. Duval, of Versailles, and upon every occasion, and at every place where they have been exhibited they have attracted general admiration. They show that these charming *Gesneriaceae* have not yet attained their highest degree of perfection. From year to year there has been an advance in purity of form, in the size of the flowers, and in the marvellous diversity of rich colouring they display. We think they very closely approach perfection, though doubtless crosses with new species would bring further improvements.

ED. ANDRÉ.

FLORICULTURE.

A NEW ROSE.

Mr. J. Schwartz, nurseryman at Lyons, has raised a magnificent new Rose, to which he has given the name of *Duchesse de Vallombrosa.* It is one of the most remarkable acquisitions of recent times, and it will doubtless enjoy a brilliant future. We append a description.

A free vigorous growing bush with straight branches. Leaves composed of 5 to 7 leaflets, of a beautiful deep green. Flowers large, full, of elegant shape, borne on a stiff peduncle, of a delicate pink colour, becoming deeper towards the centre, and white, tinged with pink, outwards.

This handsome Rose, which is truly perpetual, is the issue of the variety *Jules Margottin;* and we assert, without fear of contradiction, that it will prove to be one of the finest varieties sent out this autumn. We had an opportunity of admiring it last year on the occasion of our visit to the Lyons Horticultural Exhibition, in the capacity of judge.

RAMBLER.

NOUVEAUX GLOXINIA HYBRIDES.

1. Colore nova. — 2. La Rosière. — 3. Phèdre. — 4. Papillon. — 5. Madame Duval.

P. De Pannemaeker, Chromolith.

HORTICULTURAL CHRONICLE.

October, 1875.

— Exhibition and Congress at Amsterdam in 1877. — Primarily we announced these horticultural meetings for 1876, and subsequently their postponement till 1877. Some extracts from an important document, lately received from the general commission, will not be without interest for many of our readers.

The project was first of all mooted last year at the Congress in Florence, and the Royal Horticultural Society of London simultaneously announced the intention of holding a large exhibition in 1876. Nevertheless the right of priority was accorded to the Dutch, and a programme was speedily issued.

However, it soon became known that the Royal Society of Flora of Brussels wished to celebrate its hundreth anniversary in a worthy manner in 1876, and this date could not be departed from. Animated by the most courteous feelings a Commission, composed of Messrs. Krelage and Westerman for Holland, and Messrs. Cannart d'Hamale, Doucet and Lubbers for Belgium, met and decided in favour of the Belgian project for 1876. We have already spoken of the very comprehensive scope of the intended exhibition and congress in the Belgian capital, and we shall frequently have occasion to recur to this topic.

The Netherlands General Commission has profited by this extension of time to enlarge its field of operations. We have just received the new programme, comprising vegetable products, an important accessory to the exhibition of 1877. The principal sections are : Cottons, Tobaccos, Quinine, Madder, Indigo, Caoutchouc and Gutta-Percha, Fixed Oils and Fats, Essential Oils, Vegetable Substances employed in the Manufacture of Paper, Cereals, Cashew, Vanilla, Rhubarb, Sarsaparilla, etc.

The Commission would be glad to receive any suggestions for the amendment of this programme, which will be forwarded, on application, to any person interested in the matter, by the secretary, Mr. H. Groenewegen, 5, Oudewaterweg, Amsterdam.

— Caraguata musaica. — A short time ago we mentioned the flowering of this handsome Bromeliaceous plant in two different places simultaneously. It will be remembered that it was introduced by Mr. Linden and sent out under the provisional name of *Tillandsia musaica*. Recently we announced our intention to revise the nomenclature of certain species affected by this flowering. Now there is no longer any doubt that the presumed *Tillandsia* is a true *Caraguata*, and henceforward it will bear the name of *Caraguata musaica*. At some future time we shall publish a corrected description of the species, which we have submitted to Professor Morren, who, as is well known, is learned in all that appertains to the *Bromeliaceae*, and who is just putting the finishing touch to his work on the tribe *Tillandsiae*, for early publication. We have, moreover, reasons for believing that he will at the same time publish a key and general conspectus of the genera, and we have much pleasure in being the medium of this good news to botanists.

— Exhibition of Luxemburg. — On the occasion of the twenty-fifth anniversary of the nomination of Prince Henry of the Netherlands as the Lieutenant of the King of Holland and Grand Duke of Luxemburg, the grand-ducal government and the town of Luxemburg organised a series of brilliant festivities, which took place on the 5, 6 and 7 of this month. We took part in them with a lively interest, for horticulture held a prominent position. The horticultural committee had erected a large tent on the site of the future kitchen garden of the « Pescatore Institution », and it was well filled with hardy and hot-house plants and fruits, revealing to every observer the vast horticultural resources of the Duchy; in almost every branch of which gigantic strides have been made during the last few years. Since the treaty of London in 1866, its capital, an ancient fortress, has been an open town, and its prosperity is rapidly developing in an era of peace and industry and liberty.

— Correspondance botanique. — Under this title, Professor Ed. Morren published, about two years ago, a list of all the Botanical Gardens, Botanical Chairs and Museums in the world. This has now reached its third edition, which is much extended and a great improvement on the original. By every one connected with botany or horticulture in any way this little pamphlet will be found extremely useful. As might be expected, it contains some errors, and several names are omitted, but we may be permitted to remind our readers that it rests with those concerned to make it as correct as possible, by keeping Prof. Morren acquainted with all changes, and by indicating inaccuracies and omissions.

— African Botany. — The twenty-ninth volume, just completed, of the Linnean Society's « Transactions » contains an important addition to African botany, being entirely occupied with an enumeration of the plants collected by Speke and Grant on their celebrated journey from Zanzibar to Egypt. The descriptive portion is by Prof. Oliver and Mr. Baker, and the plates, of which there are no fewer than 136, were drawn by Mr. W. H. Fitch. It embraces 625 species, including 113 new ones.

— New Marantas. — Mr. Ed. Morren has lately described a number of new *Marantaceae* received from Brazil to Messrs. Jacob Makoy. They are *Calathea Kummeriana, Stromanthe amabilis, Cal. Oppenheimiana, Bachemiana, Leitzii, applicata, Maranta Kegeljani, pulchella* and *Wiotii*. They are mostly plants of small stature, whose merits the future will reveal. *Maranta Massangeana* is indubitably the handsomest of the lot; it is shot with violet.

Ed. André.

PL. CCXIX.

CLIDEMIA VITTATA, LINDEN & ANDRÉ.

NAT. ORD. **MELASTOMACEAE.**

GENERIC CHARACTER: *calycis* hispidi pubescentis v. rarius glabri tubus elongatus campanulatus v. ovoideus; limbus saepe ultra ovarium productus, truncatus v. 5-, rarissime 6-lobus, lobis saepissime extus dentibus elongatis instructis. *Petala* 5, rarissime 6, obovato-oblonga v. linearia, obtusa v. retusa, glabra, ad basin coronae membranaceae non raro inserta. *Stamina* 10, rarissime 12, aequalia, filamentis glabris saepissime subulatis v. filiformibus; *antherae* lineari-oblongae v. subulatae, rectae, recurvae v. incurvae, 1-porosae, connectivo basi non v. breviter producto inappendiculate gibbo v. 2-tuberculato. *Ovarium* plus minusve adhaerens, vertice tumido v. in coronam producto, rarius intruso, saepe hispidum, 3-9 loculare; *stylus* filiformis, brevis v. elongatus, stigmate truncato v. capitellato. *Bacca* globosa v. urceolata, carnoso-coriacea v. membranacea, calycis limbo coronata. *Semina* minuta saepissime obovoideo dimidiata v. obtuse pyramidata, rarius majuscula, raphe ampla exsculpta. — *Frutices ramosi, hirsuti villosi v. setosi, rarius glabrati. Folia saepius ampla, petiolata, 3-7 nervia, integerrima crenulata v. denticulata. Flores in paniculas v. fasciculos axillares rarissime terminales dispositi, in plerisque parvi, albi rosei v. purpurei, bracteati v. ebracteati, Species ad 30-40. Americae equatorialis a Mexico ad Brasiliam australem incolae.* (Charact. e Benth. et Hook. *Gen. Plant.* I, p. 766).

Clidemia, Don. in *Mem. Wern. Soc.* IV. 306. — *Staphidium*, Naudin, in *An. Sc. nat.* ser. 3, XVII, 305, pro maxima parte — DC. *Prodr.* III, 155, exclus. spec. nonn. — Griseb. *Fl. brit. W. Ind.* 246 (excl. sect. 4 et 5). — Bonpl. *Melast.* t. 3, 4. — *Bot. Mag.* t. 1971 (*Melastoma*). — Aubl. *Pl. Guy.* I, 167 (*Melastoma*). — Miq. *Comm. phyt.* t. II. B.

SPECIFIC CHARACTER: fruticosa; caulis ramique teretes robusti, molliter rufo-tomentosi; *folia* breviter petiolata, *petiolo* cylindraceo superne sulcato 4-5 cent. longo, pulverulento, *limbo* elliptico subacuto amplo ac valde conspicuo, 20-30 cent. longo, 20 cent. lato, cum caule rectangulo, superne bullato intense viridi metallico, medio vitta argentea ornato, subtus tomento rufo vestito, quintuplinervio, nervis subtus prominentissimis, nervulis pinnatis et reticulatis; *panicula* erecta, brevis, densa, pedunculo tereti violaceo, ad articulos tantum velutino; ramuli decussati, rectangule divaricati, pilis rufis stellatis sessilibus ad basin tumidam manicati; *bracteae* membranaceae calyce breviores, pilis lignescentibus hirtae; *flores* subsessiles; *calyx* glaber tubuloso campanulatus, lobis 5 obscuris dorso pilis lignescentibus unipenicillatis; *petala* 6 glabra obovato-obtusa concava haud unguiculata 4 mill. longa, 2 mill. lata, pallide rosea; *stamina* 5-6 mill. longa, filamentis brevibus, minutis, anthera rectangula lineari, loculis ad dissepimentum undulatis albis nigro-lineatis; *ovarium* ovoideum 3-loculare; *stylus* robustus cylindraceus, calycis tubum vix superans; *stigma* punctiforme. *Semina* haud vidi. — Ad rivos fl. Huallagae (Peruvia) legit Roth, 1873. — Ad viv. flor. desc. in hort. Linden. — E. A.

Clidemia vittata, Linden et André, spec. nov.

This superb Melastomaceous plant comes from the banks of the Huallaga, eastern Peru, and has been growing in Mr. Linden's houses, since 1873, as a new *Cyanophyllum*, until its flowers gave a clue to its true affinity.

It is now evident that it must be placed in the genus *Clidemia* of Don, which comprises nearly the whole of the tribe *Miconieae*, upon which Naudin founded his genus *Staphidium*, many of the characteristics of which it possesses to a marked degree. But it must be conceded that the plants of this section approach very closely to *Miconia*, and they are only kept separate to facilitate the determination of the species of the latter genus, numbering upwards of 360 forms, exceedingly difficult to characterise in words. The genus *Clidemia*, whose description we borrow from Messrs. Bentham and Hooker's *Genera Plantarum*, is confined to America — Peru, Brazil, Colombia, Guiana, Mexico, Costa-Rica and Venezuela. — About thirty species are known.

As an ornamental plant *Clidemia vittata* is in its foliage one of the most noble in cultivation, and if *Cyanophyllum magnificum* were not known, there would be no Melastomaceous plant in cultivation to surpass it. It is a hot-house plant of easy cultivation, flourishing under the same treatment as *Sphaerogyne* and *Cyanophyllum*.

ED. ANDRÉ.

FLORICULTURE.

LILIUM PARKMANNI.

This splendid Lily is a hybrid, the issue of cross-fertilisation of *Lilium lancifolium* and *L. auratum*. The latter species furnished the pollen. The young plants, the progeny of this successful cross, were put out in the open border in the spring of 1869. When the first flower opened it was of a deep red, with the odour and shape of *L. auratum*, and it was nine inches and a half in diameter.

Subsequent flowers reached nearly a foot in diameter. If the plant is of easy propagation, and especially if it bear seed, we may congratulate ourselves on the acquisition of a new and magnificent race of the Imperial Lily of Japan.

CLIDEMIA VITTATA, Linden & André.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden ex.

COCOS WEDDELLIANA, H. Wendland.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden.

PL. CCXX.

COCOS WEDDELLIANA, H. WENDLAND.

NAT. ORD. PALMACEAE.

ETYMOLOGY: from κοκκος, a kind of fruit, according to Linneus.

GENERIC CHARACTER: see *Illustr. hortic.*, t. III, sub pl. 105. — Endlich. *Gen. Pl.* 1772, et caet. auct.

SPECIFIC CHARACTER: *arbuscula* erecta, 2^m^-3^m^ alta, elegans, caudice 1^m^,50-2^m^, vertice petiolorum basibus coronato; *frondes* surrectae arcuatae brunneo squammosae; *petioli* graciles basi subtriangulo-dilatati, marginibus in fibris lignescentibus reticulatis rufis dissolventibus, supra basin annulati; *pinnae* alternae 50-60 in utraque petioli parte, anguste lineares obliquae acutae, 12-20 cent. (et ultra) longe, 7 mill. latae, planae, basi convexae, margine basilari inferiore subtereti paulo prominente, supra atrovirides, subtus glaucescentes, costa superne vix prominente, inferne immersa; *spadices* 1^m^ longi, bicarinati, carina exteriore 25 cent., interiore 5-7 cent. longa, ramis divaricatis superne geminatis. *Flores* masc.: *calyx* minimus, subtriphyllus, sepalis lanceolatis; *petala* 3, *stamina* 6; — fem.: *calyx* et *corolla* triphylli; sepala et petala subsimilia; petala majora, abrupte acuminata, calcarata; *annulus* staminodalis brevis; *ovarium* ovoideum, *stigmata* 3 trifida. *Semina* fere globulosa, parva, 3-locularia. — In Brasilianis montibus dictis *Sierra dos Orgaos*, prope Rio de Janeiro.

Cocos Weddelliana, H. Wendland, mss. — Seemann, in *Gard. Chron.* 1870. p. 494 (sub *Leopoldinia*); *Florist and Pomol* 1871, maio.

Glaziova elegantissima, Linden, *Catalogues.*

Leopoldinia pulchra (?), Martius, *Palm.* 59, t. 52, 53.

The most graceful of all Palms, whose airy, delicate foliage is now becoming familiar at our horticultural shows. Its handsome, dark green, shining, elegantly curved leaves, have gained for it the first place for dinner table decoration. This marked particularity has been the cause of *Cocos Weddelliana* receiving several names in gardens, the respective claims of which are even now not finally settled. It is said that *Leopoldinia pulchra* of Martius belongs to our plant, but of this there is no certainty, for according to the famous Martius, *L. pulchra* grows in the provinces of Rio Negro and Para, in eastern Brazil. It is employed in the decoration of their churches, and it is carried in processions; it is also used for making hedges, by cutting the trunks in the forests and planting them side by side without regard to their height. Now *L. insignis* (Martius *Palm*, 60) likewise grows in the virgin forests of Para, and is applied to the same uses. This is known in European gardens, whence Mr. Linden imported it, under the name of *Glaziova insignis*, Hort. On the other hand Wallace speaks of two more species, which he calls *Leopoldinia major* and *L. Piassaba*; but they are still imperfectly known. Finally Mr. Wendland says that *Cocos Weddelliana* was found in 1831 (he errs; it was in 1843) by Mr. Weddell in the Organ Mountains, near Rio, and by Mr. Riedel in 1832.

It seems to us, therefore, that it is necessary that the authentic specimens of these plants, together with flowers and fruits collected in the country, should be carefully compared. This would be no difficult task, for Brazil, and especialy the Amazon, is now easily accessible; and we hope before long to be able to decide these questions.

ED. ANDRÉ.

A NEW HARDY SHRUB.

Philadelphus Souvenir de Billiard. — A free-growing, vigorous shrub, ten feet or more in height; branches attaining a length of four or five feet, furnished throughout with flowering branchlets, bearing numerous flowers, arranged in threes on axillary peduncules. Flowers well formed, exceeding an inch in diameter, possessing a very slight odour, and therefore suitable for water bouquets, produced in great profusion during the latter half of June, when there are few other shrubs in bloom.

It was presented to the *Société centrale d'Horticulture* in June last, when it was an object of special attraction, and a first class certificate was awarded for it. The *Revue Horticole* also speaks of this interesting shrub. It flowered for the first time in 1870, and it was raised by C. Billiard, nurseryman at Fontenay-aux-Roses, who died the same year during the siege of Paris. It will be offered in the trade after the 15 October 1875.

F^d^ JAMIN.

PL. CCXXI.

ONCIDIUM TIGRINUM, LA LLAVE ET LEXARZA.

NAT. ORD. ORCHIDEAE.

For ETYMOLOGY and GENERIC CHARACTER see *Ill. Hort.* 1874, under plate 165.

SPECIFIC CHARACTER : *pseudobulbi* ovales compressi parum angulati, diphylli; *folia* angusta erecta membranacea manifeste petiolo vaginante articulata : *racemi* cernui simplices pedunculo breviores; *sepala* libera petalaque lanceolata undulata aequalia patientia; *labelli* lobi laterales parvi subquadrati, intermedius transversus apice inflexus vix emarginatus; *tuberculus* oblongus basi 2-dentatus apice obsolete trilobus antice excavatus; *columnae* alae breves rotundatae. — Crescit in Mexicanis Irapaeanis montibus (Lexarza), in Michoacan (Ghiesbreght Linden).

Oncidium tigrinum, La Llave et Lexarza, *Orch. Mexic.* p. 37.
— **Barkeri**, Lindl. *Bot. Reg.* 1841, misc. 174. — *Sert. Orchid.* t. 48.
— **unguiculatum**, Lindl. Walp. *Ann.* I, 789.
— **ionosmum**, Lindl. *Gard. Chron.* 1853, p. 726.
Odontoglossum tigrinum, Lindl. *Fol. Orch. Odont.* p. 5, N° 10 (Voir Rch. in *Bonplandia*, 1855, 1st August.

This charming plant is the «flor de muertos», formerly held in such high veneration by the Indians of Michoacan, and was first described by La Llave and Lexarza in their *Orchidées du Mexique*, under the name of *Oncidium tigrinum.* It bore this name in Mr. Linden's collection in 1849, having been sent home by his collector Ghiesbreght. Mr. Barker, a distinguished amateur of that period, sent specimens of it to Dr Lindley, who took it to be a new species, and dedicated it to the donor. Nevertheless it is only right to give it its true name, according to the laws of priority. Indeed Lindley himself did so with the utmost candour; thinking it in no way derogatory to his fame to acknowledge an accidental error.

This species, as our plate shows, produces long flower-spikes, often exceeding a yard in length. The flowers are large and their petals, spotted with rich brown, offer a pleasing contrast with the delicate yellow of the large labellum, giving them altogether a very effective appearance.

Moreover it possesses in the delicious violet-like fragrance, exhaled by its flowers, a charm that cannot be painted. At the time we are writing our study is perfumed with a spike of flowers lately brought from Ghent, which retain their freshness and scent for a long time.

The culture of this beautiful epiphyte is equally as simple as that of its congeners; it requires a temperate climate.

ED. ANDRÉ.

NEW FRUITS.

Mr. Michelin, the energetic secretary to the Fruit Committee, recently read before the central Horticultural Society of France, a report on the fruits raised from seed and submitted to the Society for examination by the committee since July 1872. We enumerate a few of the most meritorious varieties :

Peach *Alexis Lepère*, so named by Mr. Alexis Lepère junior, has proved a fruit of great merit during three successive seasons.

Peach *Belle de Geslin*, sent by Mr. Ed. André, and propagated by Mr. Defain, nurseryman at Amboise, engaged the attention of the committee not only on account of its quality, but also from the circumstance that its fruit does not ripen sometimes before the beginning of November.

Pear *Beurre de Dubuisson*, obtained in Belgium and forwarded by Mr. Dumortier, is a late variety, ready at the end of January, of medium size, with a fine juicy flesh of excellent flavour.

Pear *Bergamotte Balicq*, raised by Mr. Balicq of Bavay, and fit for use in December and January. It has a rich, melting juicy, sugary flesh of agreeable perfume. It is perhaps slightly deficient in sugar and in size.

Pear *Drouard*, presented by Mr. Louis Leroy of Angers, attains a moderate size. It was adjudged on the 11 of March as melting, sugary, very juicy, and of a nice, agreeable taste.

A large number of other fruits have been before the committee, among them several good ones which the committee have asked to be allowed to try again before pronouncing a decided opinion as to their merits.

ONCIDIUM TIGRINUM, La Llave & Lexarza.

J. Linden ed.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

HORTICULTURAL CHRONICLE.

November, 1875.

— Grafting Periwinkles on the Oleander.— According to the *Revue Horticole* Mr. Lambotte, flower painter at the municipal horticultural establishment at La Muette, Paris, conceived the happy idea of grafting different varieties of Periwinkle n the Oleander, and successfully accomplished it. This is, however, not so surprising as it appears at first, for both genera belong to the *Apocyneae*. It is even probable that the pretty *Vinca rosea* from Madagascar would succeed on the Oleander, and if grafted on tall stems, quite a new feature might be introduced in our market flowers.

— Lilium Packmanni. — The Gardener's *Chronicle* of the 16 October, contains a fine drawing of this gorgeous Lily, together with a description from the pen of Mr. T. Moore, which we here reproduce in full:

Stem slender one-flowered (? always); leaves ovate-acuminate, alternate, five-nerved; flowers very large, the perianth-segments spreading out nearly flat from the base, and becoming recurved towards the apex, the petaline ones broader, white, suffused towards the greenish base with rosy crimson, and thickly studded with deep crimson spots and papillae; stamens somewhat spreading, the anthers nearly an inch long, and the pollen deep chocolate-coloured; style green about an inch longer than the stamens, with a purple stigma.

A hybrid between *L. auratum* and *L. speciosum (lancifolium)* raised in the United States of N. America by Mr. Packmann.

There is no doubt that this hybrid is the most magnificent acquisition to our gardens that we have chronicled for many years.

— Rheum nobile. — Several of our correspondents who have received young plants of *Rheum nobile*, from the Himalaya, of which we gave a portrait in June last, are in great fear of losing them, and request us to give them some information respecting the culture of this species. We can only hazard a guess on this point at present, the plant not having yet attained its full development in Europe.

Nevertheless, we think if it prove more delicate than its allies, it will be advisable to subject it to the same treatment as the Himalayan Rhododendrons. Like them, it is a native of the high plateaus of Sikkim in a brisk, rarefied atmosphere. A peaty soil, and a cool house in our climate, or even the open air in the milder parts of the south-west, ought to suit it admirably.

— Eucalyptus as an Insectifuge. — We extract the following passages from a letter recently received from Mr. Ch. Baltet, of Troyes, and recommend our readers to try the experiment for themselves when the season arrives:

“ Lately my brother-in-law, Captain Mignard, being very much disturbed in his sleep by mosquitos, took it into his head to place a young plant of *Eucalyptus* in his bed-room over night. From that moment the insects disappeared, and he slept in comfort. I have been following his example with the same result. Should this really prove generally efficacious our southern provinces will be freed of one scourge. People will use young plants of *Eucalyptus* instead of mosquito curtains. It is probable too, that branches would be equally serviceable to animals in stall or stable. Green leaves would doubtless be more effectual than dried ones, and the living, growing plant would possess a still more active influence. A solitary plant of *Eucalyptus globulus* in a bed-chamber would not inconvenience any one by its balsamic odour. „

— Fruiting of the Purple-leaved Peach. — This handsome and effective ornamental tree has recently ripened fruit in the establishment of Mr. Ambrose Verschaffelt. We have had a painting of it made for the *Illustration Horticole*. Mr. Carrière reports too that he has tasted the fruit of this variety at Versailles this year.

— Pomological Congress at Ghent. — Since last session the Pomological Congress, assembled at Ghent, has adopted the fruits whose names follow:

Apricots: Gros Rouge d'Alexandre, Musqué de Provence.

Raspberry: Surprise d'automne.

Peaches: Belle de Toulouse, Belle Impériale, Noblesse, Early Louise, and Salway.

Pears: Madame Grégoire, Marie Benoist, Professeur Hortolés, Sœur Grégoire.

Apples: Burchardt's Reinette, Reinette des Carmes, Transparente de Croncels.

Plums: Early Favourite, Tardive musquée.

Grapes (table): Rosaky.

Grapes (wine): Mourvède.

It will be observed several of these are old favourites in British Gardens.

Many other varieties were under investigation, including several of Belgian origin.

Mr. Ch. Rogier, minister of State, and the founder of the Royal Commission for Pomology, has received this year the gold medal awarded annually to the person wo has done most to advance pomology.

— International Horticultural Exhibition at Cologne. — This exhibition was closed on October 3; and on September 29 the distribution of the prizes took place in the winter garden of the *Flora* Society. Our readers may be glad to learn who were the chief prize-takers.

GRAND PRIZES OF HONOUR

consisting of objects of art and gold and silver medals.

Mr. J. Linden, Ghent. — Prize of Honour, a Vase the gift of H. M. the Empress.

Mr. J. Veitch, and Sons, London. — Prize of Honour, a Porcelain Service, the gift of H. M. the Empress.

Mr. B. S. Williams, London. — Prize of Honour, a Porcelain Service, the gift of H. H. the Prince Imperial.

Mr. J. Lemonnier, nurseryman, Brussels. — Large Gold Medal of the State.

Mr. E. Langen, Cologne. — Large Gold Medal of the State.

Professor Begas, Berlin. — Large Silver Medal of the State.

Mr. F. J. C. Jurgens, Hamburg. — Large Silver Medal of the State.

Mr. Wilhelmy, Hattenheim. — Large Silver Medal of the State.

Messrs. Croux and Son of Sceaux, near Paris. — Large Silver Medal of the State.

Mr. Charles Van Geert, of Antwerp. — Silver basked offered by the town of Hamburgh.

H. H. the Khedive of Egypt. A special Certificate of Honour for a very complete collection of agricultural and horticultural products of Egypt, Darfour and the shores of the Red Sea.

— Canna liliiflora. — In a late number (Nov. 1) of the *Revue Horticole* the comte de Lambertye has given some interesting details on the culture of a plant that has now become exceedingly rare in collections *Canna liliiflora.* He has succeeded in keeping it uninterruptedly ever since 1860, alternately in a temperate house in winter and in the open air in summer — from the end of May till the first week in October. And it has flowered and fruit year after year without any special care or treatment.

The largest specimens in the possession of the Comte de Lambertye at Chaltrait, gave the following measurements on the 27 September last : height from the soil to the tips of the upper leaves, about 17 feet; circumference of the clump near the ground, about 8 feet; circumference near the top, about 20 feet; number of stems, 30; girth of one of the largest stems near the base, about 10 inches; length of the longest leaves 3 feet 9 inches; width of the largest leaves, 20 inches. This plant flowered in June; and at the end of July it had ripened seed in abundance.

This fact reminds us of the introduction of another species of Canna, an undescribed one, sent from Nicaragua by Mr. Levy in 1870. A ripe fruit enables us to sow a few seeds which will produce adult plants in two years time. It resembles *C. indica* but it is dwarfer by half in the stem, and less hardy.

— Exhibition at Philadelphia. — The works for the exhibition gain in importance from day to day. Each state and each country that has signified its intention of sending products to the exhibition will have a separate pavilion at the disposal of its delegates.

The area devoted to the purposes of the exhibition is 300 acres.

Eight branches from the different railways are already constructed for communication with the exhibition. And a hotel to contain 5000 beds is in course of erection hard by. Belgian Horticulture, as well as English, will be strongly represented, and French Horticulture will not be left in the back ground.

— On carnivorous Plants. — From Prof. Ed. Morren we have two extremely interesting pamphlets, embodying the results of a series of experiments, undertaken by him from reading Dr. Hooker's address and Mr. Darwin's recent book on insectivorous plants. Mr. Morren does not arrive at the same conclusions as the English naturalists. Although he proved that the glands on the leaves of *Drosera longifolia* and *Pinguicula longifolia* are the means of capturing and causing the death of insects, he is of opinion that the latter decay in the ordinary course of nature, and not through the action of a particular fluid analogous to pepsin, conveying the digested mass into the system of the plant.

— Exhibition of Potatos. — On the 29 September, Messrs. Abbis and Shirley Hibberd presided at a dinner, given at the close of the international show of Potatos at the Alexander Palace, London. The first prize of 10 guineas was awarded to Mr. Dean of Ealing. The exhibition was a great success, and it is proposed to hold another next year.

— The trilobed Crotons. — In our last number we gave a figure of the first type of the race of Crotons having three lobed or hastate leaves, of which Mr. Moore of Sydney showed us some dried specimens at Florence. Several varieties are spreading in cultivation, and it is as well that we should come to some understanding as to the tribual name to adopt for them collectively. Thus, in the *Gardeners' Chronicle* for the current month (Oct. 2) there is a description, illustrated with wood-cuts, of one of these varieties, called *C. Disraeli,* Veitch. Simultaneously Mr. Bull advertises for sale a similar form, under the name of *C. trilobum.* It is our duty to put our readers, and more particularly plant merchants, on their guard against these three different names for the same, or very slightly different plants. We would suggest giving to the new varieties of this race which are sure to spring up the distinctive appellation of *hastiferum,* adding the name of the sub-variety, for there is no use in trying to evade the fact that they are the issue of *Codiaeum pictum.* Hence we might say *C. hastiferum, Disraeli, C. hastiferum trilobum,* etc.

— Agave Consideranti. — This handsome new species was exhibited by Mr. De Smet at the late exhibition at Cologne, who sold his stock of it to Mr. Peacock of London, the well-known amateur of this class of plants. He at once telegraphed home for permission from Her Majesty the Queen to dedicate to her this North American novelty, which was granted. But there is a little difficulty in the way of accepting this name. It is this : the same plant was introduced into the *Museum* gardens at Paris, where for the last six months it has borne the name of *Agave Consideranti,* from the name of its introducer. Mr. De Smet was aware of this when he bought the plant, and that nobody has the right to rename a known plant. All the noise about this curious plant from Texas, leads up to the discovery of a little piece of horticultural dissimulation, which we cannot pass over in silence.

Ed. André *and* W. B. H.

CENTROSOLENIA ÆNEA, Linden & André.

P. De Pannemaeker, ad nat. pinx. et Horto Lind.

J. Linden, publ.

PL. CCXXII.

CENTROSELENIA AENEA, LINDEN & ANDRÉ.

NAT. ORD. GESNERIACEAE.

ETYMOLOGY : from χέντρον, a spur or sharp point, and σωλην a tube or funnel, in reference to the spurred corolla.

GENERIC CHARACTER : see *Ill. Hort.* 1869, Pl. 607.

SPECIFIC CHARACTER : *planta* tota pilis erectis articulatis hispida; *caules* e basi robusti, suberecti, succulenti, teretes; *folia* opposita horizontalia v. decumbentia, petiolo 5-8 cent. longo supra plano basi sulcato, limbo obovato-lanceolato acuto basi elongato subauriculato, 20-25 (et ultra) longo, medium versus 8-10 lato, dentibus grossis cucullatis crenato, costa nervisque primariis prominentissimis, supra bullato colore metallico aeneo, subtus violaceo nervis prominulis; *flores* albi aggregati axillares, pedunculati, bracteis inaequalibus (una maxima lanceolata foliacea petiolata, alteris linearibus sessilibus): *petioli* inaequales 1-3 cent. longi, crassi, uniflori, cylindrici, hirsutissimi; *calyx* hirtus sepalis liberis acuminato-acutis apice retrorsis, grosse dentatis, 2 cent. longis, utrinque (sub lente) verruculosis, 2 lateralibus erectis, 1 dorsali retro dejectus, caetoris 2 tubo corollae parallelis; *corolla* glabra lactea subhorizontaliter in calyce inserta, basi saccata, tubo brevi, ante medium ventricosa, 4 cent. longa, 1 cent. diamet., lobis 5 patentibus rotundatis aequalibus; *staminum* filamenta basi dilatata oblique ad basin corolla inserta, dimidium tubi attingentia; *antherae* reniformes; *ovarium* superum hirsuto-sericeum, annulo mediocri vix dentato basi cinctum, glandula subglobosa dorsali; *stylus* inclusus, cylindraceus, 2 cent. longus; *stigma* papillosum, infundibulare. — In Nova-Granata legit Roezl, 1872. — Ad vivum flor. desc. in hort. Linden — E. A.

Centroselenia aenea, Linden et André, *spec. nov.*

Since the publication in this journal (1869, pl. 609) of a description and portrait of the beautiful plant with inflated leaves of a metallic lustre, sent out by Mr. Linden under the name of *Centroselenia bullata*, not another species of this Gesneriaceous genus has appeared in the gardens of Europe. It is therefore a piece of good fortune to have a second to figure after a lapse of six years. The honour of its discovery is due to Mr. Roezl, who found it in 1872, in New Grenada.

The plant grows in strong tufts clothed with long white hairs. It is of erect habit with a fleshy cylindrical stem, branched from the base, jointed, but not swollen at the joints. The leaves are spread out horizontally at first, afterwards pendent and reclining on the pot; petiole about 2 to 3 inches long flattened above and hollowed out near the base; blade obovate-lanceolate, acute, very much narrowed and lengthened downwards, and somewhat cordate and auricled at the base, 8 to 10 inches or more in length by 3 to 4 inches broad in the middle, bordered with coarse cucullate teeth. The midrib and the parallel secondary nerves diverging therefrom are very prominent on the under surface of the leaf, which is of a rich vinous purple. Between the intermediate raised nervation of the upper surface are raised inflations, the whole being of a rich dark satin-green, shot with metallic purple-violet, like an old Florentine bronze. Flowers axillary, pedunculate, subtended by unequal irregular bracts, one of which is large and leafy, and stalked, and the others small, linear-lanceolate and sessile. The peduncles are unequal, one flowered, cylindrical, violet, and hispid like the five-parted calyx. Sepals free to the base, lanceolate acuminate acute, recurved at the open, coarsely toothed, green above, purple-violet beneath, 9 lines long by about 2 lines broad, covered on both surfaces with minute translucent (as seen through a lense) tubercles; two of them are erect, one on each side of the corolla tube, two parallel to it, and the fifth thrown backwards by the gibbous spur. Corolla glabrous, creamy white, inserted almost horizontally on the base of the calyx; tube short contracted at the base, obliquely bulging below the middle cylindrical at the top, furnished with a large saccate spur, about 1 ¹/₄ inches long by 4 lines in diameter, surmounted by spreading rotate rounded equal lobes, very slightly suffused with pink on the outside. Stamens with conjugated filaments, flattened below the middle inserted obliquely near the base of the tube, and half as long as the latter, recurved at the apex; anthers reniform, or nearly spherical 2-celled. Ovary superior, silky, inserted on a thin annulated slightly 5-toothed disk, the dorsal tooth smooth spherical glandular; style included cylindrical; stigma infundibuliform, papillose, recurved.

Ed. André.

PL. CCXXIII.

BEGONIA FROEBELII, A. DE CANDOLLE.

NAT. ORD. BEGONIACEAE.

For ETYMOLOGY and GENERIC CHARACTER: see *Illustr. Hortic.*, 1875, pl. 212, p. 106.

SPECIFIC CHARACTER : *planta* tuberosa; *scapi* erecti quam folia radicalia duplo fere longiores, sursum pluries bifidi, ut petioli lanuginosi; *folia* oblique elliptica, palmata 7-9 nervia, margine undulata et crenulata, supra sparsim pilosa, subtus dense piloso-lanuginosa, stipulis triangularibus; *bracteae* ovato-acutae, ut pedunculi, pedicelli, floresque externe pubescentes; *flores* coccinei, masc. disepali, dipetali, ampli; *antherae* lineares, filamentis aequalibus; fem. 5-lobi, alis obtusis, una majore. — Ecuador.

Begonia Froebelii, Alph. De Candolle, in *Gardeners' Chronicle*, 1874, II, p. 552.

We are indebted to Mr. Roezl for this beautiful tuberous-rooted Begonia, which he discovered in the republic of Ecuador, about 1872 or 1873, and sent to Messrs. Frœbel nurserymen of Zurich. It was determined by Mr. A. De Candolle, the learned monographer of the *Begoniaceae* for the « Prodromus ». According to him, *B. Froebelii* is nearly allied to *B. cinnabarina*, Hook. fil., belonging to the section *Husia* in the « Prodromus », but it differs from this in its more ellipitical, more deeply cordate leaves, its less obtuse bracts and the probably acute base of the capsule. From *B. Veitchii* it differs in its more hairy leaves, and by the hairs of the scape and petioles being shorter and less spreading. Finally it is distinguished from *B. Clarkei* by similar slight differences, and by the scarlet, not rose, colour of the flowers. And it differs from all the species named in the strictly linear, not obovoid shape of its anthers, a character which appears more constant in this genus, than any difference of hairs, shape of leaves, etc. The native country also is not the same, our plant coming from Ecuador, whilst all the others inhabit Bolivia or Peru, and it is well known that Begonias generally are very local plants.

This species was greatly admired at the exhibition of Cologne, where it was awarded a gold medal; and it will doubtless soon take its place in this favourite section of the genus.

« It differs essentially from all the tuberous-rooted Begonias hithertho known. The leaves spring directly from » the tubers, and spread out in great profusion ; and they » are broad and ample like those of most of the species » belonging to the group with ornamental foliage. They » are of a lively green, embellished with white hairs, and » clothed with a dense felt of white hairs on the under » surface. The young leaves are altogether woolly, resembling purple plush.

» The erect, not pendent, flowers are borne in large clusters on long straight firm peduncles, elevated above the » foliage. They are large, and of the most dazzling scarlet, » of a shade previously unknown in Begonias, and of » such brilliancy that we can compare it to nothing else » but the flowers of *Verbena defiance,* or the glowing bracts » of *Poinsettia pulcherrima.* The coloured plate opposite » represents the plant at two thirds of its natural size, but » it was impossible to reproduce the scintillations in the » colour of the living plant.

» This species is a far more profuse bloomer than any » other Begonia in cultivation, the flowers being produced » in abundance from June till the frosts of Autumn. Further, » the flowers stand better than those of any other Begonia. » We had proof of it at the International Exhibition at » Cologne, where this species retained its beauty in spite of » the long journey, the tropical heat and dust it was subjected » to, and continued to develop its flowers abundantly *in* » *the open air fully exposed to the sun,* during the whole » period, from Aug. 23, to Sept. 10, whilst a collection of » hybrid tuberous-rooted Begonias placed by their side, » under the same conditions, had lost nearly all their flowers » at end of the second day. »

The foregoing information on the hardy constitution of our plant, furnished by Mr. Frœbel himself, gives us reason to believe that it will prove a valuable species for out-door culture.

Ed. André.

PL. CCXXIV.

PURPLE-LEAVED PEACH.

In our last chronicle we mentioned the fruiting of this fine American variety, which induced us to have the accompanying coloured plate prepared. This was executed from the subject that fruited in the establishment of Mr. A. Verschaffelt at Ghent. We have already stated that it had also been seen in fruit by Mr. Carrière, at Versailles.

It is needless to say that this is one of the handsomest of our hardy trees with coloured foliage ; but it has been objected that it loses its brilliant colour as the season advances, finally becoming quite green. This, however, is the case with nearly all trees having highly coloured foliage in the Spring ; and if the Purple-leaved Peach furnishes us with one of the most brilliant colours that adorn the landscapes of our parks and gardens for two or three months in Spring, we may say that it has pretty well fulfilled its part when Summer and Autumn arrive.

Ed. André.

BEGONIA FRŒBELII, A. DE CANDOLLE.

J. Linden, edit.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

PÊCHER A FEUILLES POURPRES.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden, ed.

HORTICULTURAL CHRONICLE.

December, 1875.

— The Fungus Show at Perth. — This show was held on Sept. 29th and 30th and Oct. 1st and proved very successful. Many of the principal British cryptogamists were present, and the show of species is described as the most comprehensive ever seen, some 150,000 specimens. Many were of great interest and rarity, and there were several additions to the British flora. A full account of the meeting is given in the *Gardener's Chronicle* for October 9. The show at Hereford was rendered specially important by a valuable paper read by Mr. W. G. Smith on the reproduction of *Coprinus radiatus,* illustrated by beautifully coloured drawings of large size.

— Garden Varieties of Tobacco. — The tobacco, *Nicotiana tabacum,* has given birth to a number of handsome varieties, ornamental both from the amplitude of their foliage and the colour of their flowers, and they add not a little to the embellishment of a garden; but many of our readers will, doubtless, be surprised to learn that it is not permitted to grow them in France. The cultivation of Tobacco is restricted to certain departments, and elsewhere it is strictly interdicted. France is probably the only country in the civilised world in which such arbitrary regulations exist.

— Monograph of the Lilies. — At the present time a magnificent work is in course of preparation in England; and it is of such a character as to recommend itself both to the botanist and the horticulturist, not alone for the interest of the subject, but likewise on account of the manner in which it is to be treated. We allude to Mr. Elwes's forthcoming monograph of the splendid genus *Lilium.* Mr. Elwes himself has traversed Asia Minor and various other countries of the Levant, where he had opportunities of studying many species in their native habitats, and of enriching his fine collection at Cirencester. From a horticultural point of view he has met with the most valuable assistance from Mr. Max Leichtlin, of Carlsruhe, who has given him access to his collection of cultivated Lilies, which stands unrivalled at the present time. Botanically, he has the co-operation of Mr. J. G. Baker, assistant curator of the large herbarium at Kew, and one of the botanists, who, with Mr. Duchartre, are best acquainted with the numerous forms presented by this genus, the synonymy of which is in many cases exceedingly perplexing. Mr. Elwes's monograph will be published in large folio, in about six parts, at one guinea each, each part containing eight coloured plates from drawings by Mr. W. H. Fitch.

— Uses of Spanish Moss. — During the last few years a curious Bromeliaceous plant, *Tillandsia usneoides,* which is exceedingly common in the tropical and subtropical regions of Spanish America, has been extensively employed in various ways. It grows in tufts on trees, and bears a general resemblance to an *Usnea* in its manner of growth. In the trade it is known under the names of Spanish Moss, barba de viejo, Old Man's Beard. At the present time the annual export from New Orleans amounts to 10,000 bales. It is used for stuffings cushions and other articles of upholstery, for packing, and in the manufacture of paper.

— Rheum nobile. — This plant is just now the object of special culture at Kew, and doubtless many of our subscribers will be glad to know the mode of treatment pursued, not only on account of the difficulties encountered with this particular species, but for the genus in general, which has become a great favourite since the publication of professor Baillon's labours on it, and the discoveries of Mr. Przschwalsky and other naturalists in Eastern Asia. It will be remembered that in the elevated regions on the mountain slopes where *Rheum palmatum*, *R. officinale*, and probably other species, grow, the atmosphere is constantly heavily charged with moisture; and at the same time the inclination of the ground prevents the accumulation of water about the thick, fleshy roots of these plants; a condition which would speedily effect their destruction. The natural requirements of the plant were taken into consideration at Kew. The seeds are sown in a cold frame in March, and the young plants pricked out in pots in May and the pots plunged in a mixture of sand and loam, 9 inches deep, resting upon a layer of broken bricks 4 inches thick, which secures effectual drainage. During the summer, the sashes are removed, and replaced by straw shades, kept constantly moist by syringing. In this way the young plants enjoy a humid atmosphere. When it rains, the lights are put on again, leaving at the same time free access to the air.

— A Tree from the Mississipi. — Recently a section of a large tree has been sent to the Philadelphia exhibition from the sources of the Mississipi. It measures twenty feet in diameter. The tree from which it was taken was 26 feet in diameter at the base, and 276 feet high. From the number of concentric rings it is estimated that the age of the tree was 2120 years. The portion of the trunk sent is sixteen feet long, and a room of considerable size might be fitted up in the hollow centre.

— Flora of Tasmania. — Baron Müller has recently published, under the title of *A Census of the Plants of Tasmania*, a very accurate list of all the Flowering Plants and Ferns indigenous in Tasmania, which will be alike useful botanists and horticulturists.

Obituary. — The death is announced of an Irish amateur horticulturist, Dr. Plant, well known to all who have devoted themselves to the culture of the *Auricula.* The deceased was 85 years of age, having expired at Monkstown in October last.

Horticulture has sustained another loss in the person of Albert Bruchmüller, a collector, who has sent many interesting plants to Europe, especially Orchids, from the United States of Colombia.

Mr. Bruchmüller was born at Magdeburg, and has been successively attached to the firms of Messrs. Hugh Low et

Co. and Mr. W. Bull. From the imperfect reports received, it appears that this hapless traveller was assassinated by a soldier in the beginning of August last. Doubtless this act was in some way connected with the civil war which is again desolating that beautiful but unfortunate country.

The death of Mr. Alphonse Mas is a no less serious loss to Pomology. He was President of the Committee of the French Pomological Society, and he was carried off by a fresh attack of a serious complaint shortly after his return from the last congress at Ghent. Mr. Mas, a chevalier of the Legion of Honour, was the son of a merchant of Lyons. His marriage in 1842 caused him to settle at Bourg, in the department of Ain, where his taste for fruit-tree culture soon led to his establishing some gardens adjoining the town walls, which now contain 8000 fruit-trees. He was the founder of the Horticultural Society of Ain, and soon became affiliated to every enterprise of importance connected with fruit-tree culture. In 1863, Mr. Mas commenced his pomological work *Le Verger* (The Orchard), a work of solid information, which has earned its author a worthy reputation, and which has already reached its eighth volume. In 1874, a new publication, *Le Vignoble* (The Vineyard) was undertaken in connection with Mr. Pulliat. This contains figures and descriptions of the best varieties of grapes for the table and the wine-press. During the last fifteen years, Mr. Mas took an active part at the most important fruit shows, and much more valuable work was expected from him, when he died at the age of 59 years.

Ed. André.

Mr. André travelling. — Early in November last, our editor, Mr. Ed. André, left Europe on a mission of scientific exploration to equatorial America. Botany and horticulture are the principal objects of his journey, and a part of the project is to explore some little known regions of Colombia, Ecuador, Peru and Brazil. We hope that he will succeed in collecting some valuable plants, and that he will return home laden with interesting informations respecting that paradise of vegetation. Before starting he had secured the services of a distinguished botanist to conduct the publication of the *Illustration Horticole* during the forthcoming year; and we ourselves have taken every possible precaution to ensure for it its usual attractions, to say nothing of the interesting communications Mr. André will not fail to send us from America.

J. Linden.

PL. CCXXV.

ARALIA (?) VEITCHI, HORT. ANGL.

NAT. ORD. ARALIACEAE.

ETYMOLOGY and GENERIC CHARACTER : We cannot refer this plant with certitude to the genus *Aralia* without flowers, and therefore we simply retain its provisional name with all reservations.

SPECIFIC CHARACTER : *arbuscula* erecta, glabra, *trunca* cylindraceo maculis subereis vittata, longe petiolata, petiolo filiformi 8-10 cent. longo, apice geniculato eburneo, basi incrassato amplexicauli stipula ovato-obtusa subereis vittata, lobis 10-12 liberis, 10-15 cent. longis, 4 mill. latis, linearibus acutis, marginibus elegantissime undulatis, costa utrinque prominula, supra atroviridibus, nervis marginibusque albido-roseis, subtus cinereo-violascentibus; *flores*.... — In Nova-Caledonia. — E. A.

Aralia Veitchi, Hort. Angl. — Veitch, *Catal.* 1873, p. 11 (cum. fig.). — *The Garden*, 1875, p. 483 (cum fig.). — *Gard. Chron.* 1874, p. 49, 92 et 727. — *Belg. hort.* XXIV, p. 29. — Cogniaux et Marchal, *Plantes ornementales*, II, pl. XLVIII.

Aralia Veitchi is a woody, erect plant having a simple, cylindrical stem, more or less covered with unequal corky patches, tinged with violet when young, deep green near the petiole with triangular spots. Petiole very slender 4 to 6 inches long, swollen at the base and stem-clasping, with short oval obtuse stipules, slightly kneed at the summit and ivory white, iron-grey throughout the rest of its length. Blade of the leaf digitate, lobes almost free to the base, 4 to 6 inches long, and nearly 2 lines broad, linear, acute often oblique at the tip, and elegantly waved at the margin. In colour the leaves are of a deep green above, traversed by pinky white veins and bordered with the same tinge, dul violet beneath; midrib prominent on both surfaces.

This elegant *Araliaceae*, a native of New Caledonia, has taken its place in the first rank of decorative plants, on account of the grace and beauty of its foliage; indeed for the dinner-table, side-board, window, and other in-door purposes it has few rivals.

It was discovered by Mr. Pancher, who disposed of some specimens of it to Mr. John Gould Veitch; and subsequently introduced both living plants and seeds to Mr. Linden's Establishment at Ghent.

Ed. André.

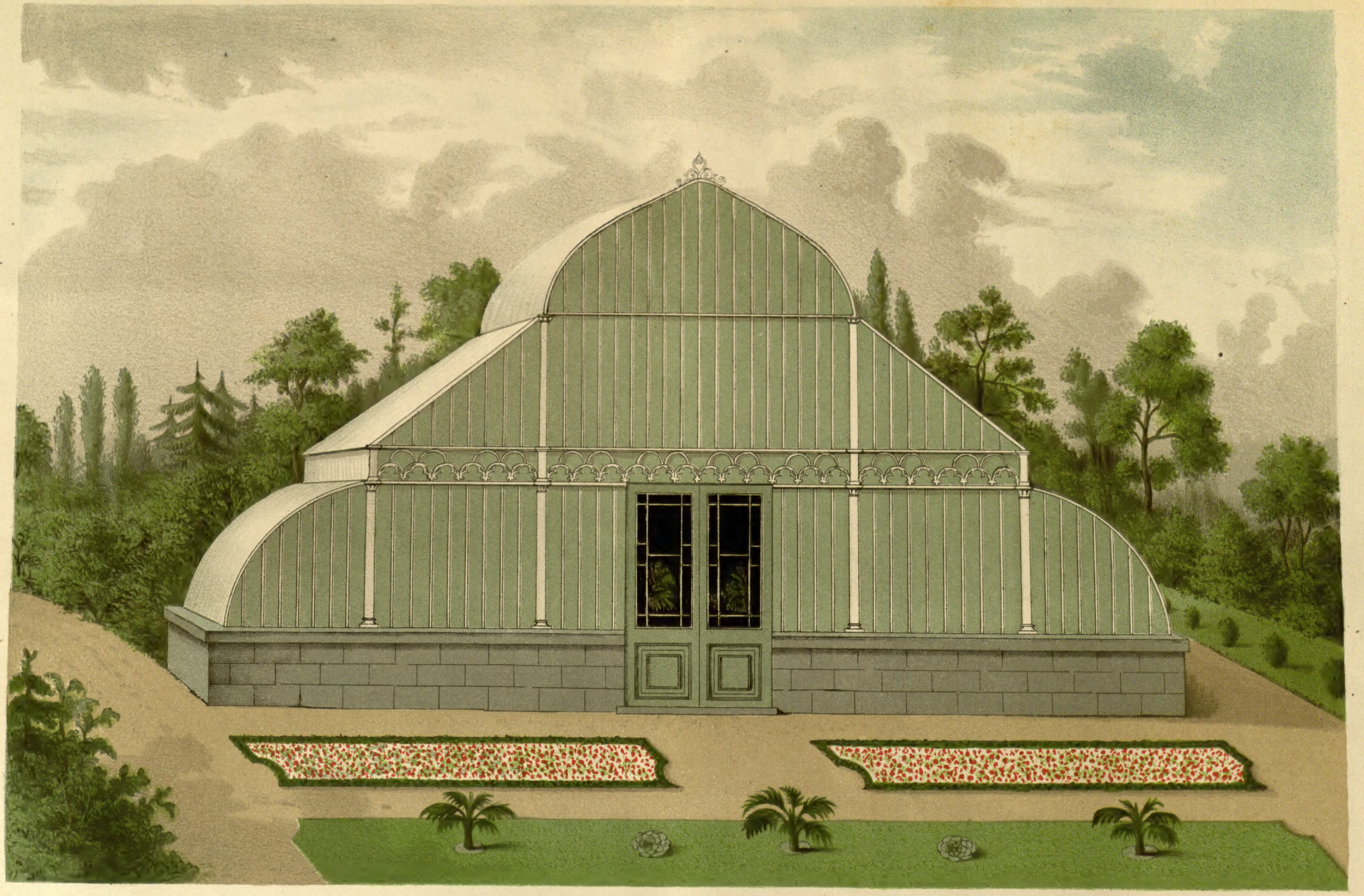
ARALIA (?) VEITCHI, Hort. Angl.

P. De Pannemaeker, ad nat. pinx. in Horto Lind.

J. Linden. ed.

TODEA WILKESIANA, BRACKENRIDGE.

P. De Pannemaeker, ad nat. pinx. in Horto Lind. J. Linden, publ.



P. De Pannemaeker, ad nat. pinx. in Hort. Lind.

J. Linden, publ.

NOUVEAU JARDIN D'HIVER DE M. J. LINDEN, A GAND.

PL. CCXXVI.

TODEA WILKESIANA, BRACKENRIDGE.

NAT. ORD. FILICES.

ETYMOLOGY: After a distinguished german mycologist, named Tode, author of *Fungi Mecklenburgenses.*

GENERIC CHARACTER: omnia *Osmundacearum* (i. e. sporangia hypophylla, v. frondibus contractis paniculata, pedicellata, tenuissime membranacea, annulo dorsali lato incompleto, vertice dehiscentia, sporae oblongae v. subglobosae, indusia varia; frondes bipinnatae, stomatibus praeditae, vernatione circinnatae, fertiles saepissime contractae); charact. autem *Todearum* sic: *sporangia venulis frondis imposita.* — Filices Novae-Hollandiae, Novae-Zelandiae et Novae-Caledoniae, frondibus bipinnatis.

Todea, Willdenow, in *Act. Acad. Erfurt*, 1802, p. 11. — Schkuhr, *Crypt.* t. 147. — Kaulf, *Enum.* t. 1, p. 5. — Hook et Grev. *Ic.* t. 101. — A. Rich, *Fl. Nov.-Zeel.*, t. 16.

SPECIFIC CHARACTER: *caudex* erectus, stipitibus laevibus semi-teretibus antice sulcatis, *frondes* membranaceae glabrae bipinnatae, pinnis sessilibus oblongo-lanceolatis inferioribus deflexis, rachibus pilosis alatis, pinnulis oblongis obtusis dentatis basi oblique cuneatis pellucido-punctatis. — Nova-Caledonia, ins. Fidji.

Todea Wilkesiana, Brackenridge, *United States exploring expedition*, XX, 309, t. 43.

— Fraseri β Hooker et Baker, *Syn. fil.* p. 427.

This charming Fern is a native of New Caledonia, whence Mr. Linden's collectors have lately sent some fine living examples. It is also found in New Zealand, the Fiji Isles, and probably in other parts of the Southern Archipelago.

It assumes the form of a miniature tree, having an erect, black stem, swollen at the base, and clothed with adventitious roots. Scars of the fallen fronds prominent. In height this species barely exceeds a yard, judging from the specimens seen on our last trip to Ghent; but it is remarkable for the elegance and grace of its decompound finely cut, membranous translucent fronds, resembling in the latter characters those of a *Hymenophyllum* and other ferns that delight in a humid atmosphere.

To have this fern in all its beauty it should be kept in a cold or temperate house, with a close, moist atmosphere, such as suits *Leptopteris superba;* but it will flourish without being confined in a glass case. Ed. André.

PL. CCXXVII.

Mr J. LINDEN'S NEW WINTER GARDEN.

A fine large iron and glass structure has recently been added to Mr. Linden's establishment, to shelter the specimen Palms, Ferns, Cycads, etc. It is a magnificent conservatory, as may be imagined from the accompanying plate, measuring nearly 100 feet in length, by 52 feet in breadth and 30 feet in height.

In this spacious building, Mr. Linden will be able to winter his large specimens of tree-ferns, among which he has *Balantium antarcticum* with trunks 20 feet high and 3 yards in girth! Probably the largest hitherto introduced into Europe.

Among some of the handsomer of the plants occupying this house, we observed examples of *Cyathea medullaris* with trunks exceeding 12 feet in height, surmounted with a crown of magnificent fronds, *Cyathea dealbata, excelsa,* etc., *Alsophila contaminans. A. australis, Dicksonia squarrosa, D. Smithii, Cibotium princeps* with a trunk 16 feet high, *C. regale, C. spectabile, Todea caffra* and *barbara* with enormous trunks, *Livistona olivaeformis, Hoogendorpii* and *Jenkinsii, Latania borbonica, Jubaea spectabilis, Phoenix tenuis, aurea,* etc., *Chamaerops stauracantha, arborea* and *elegans, Thrinax argentea* and *elegans, Dion edule, Cycas revoluta* and *circinalis, Encephalartos caffra, glabra horrida, lanuginosa, Lehmanni, villosa, Vroomi* and other handsome species, *Strelitzia Ernesti-Augusti, Musa ensete,* etc., etc. — It will be readily understood that it is difficult to say much about the constantly changing occupants of a house in a commercial establishment, and therefore we are content with quoting the names of a few remarkable species to-day, especially as we shall frequently have occasion to repair thither again.

A. Ducos.

LIST

OF THE

COLOURED PLATES

IN THIS VOLUME.

	Pl.
Aralia (?) Veitchi	225
Araucaria Balansae	197
— Rulei	204
Astrocaryum Murumuru	213
Azalea Bettina della Valle	203
— Made Jean Wolkoff	193
Begonia Froebelii	223
— Gunneraefolia	212
Camellia Albino Botti	208
Centroselenia aenea	222
Clidemia vittata	219
Cocos Weddelliana	220
Croton *(Codiaeum)* Andreanum	210
— — bellulum	210
— — hastiferum	216
Cypripedium Parishi	214
Dendrobium thyrsiflorum	207
Dicksonia chrysotricha	206
Dieffenbachia Antioquiensis	192
Dracaena Warocquei	217
Epidendrum paniculatum	211
Hybrid Gloxinias (new)	218
Masdevallia polysticta	199
— amabilis, *var.* lineata	196
Oncidium tigrinum	221
Peach, purple-leaved	224
Pitcairnea staminea	205
Rheum nobile	209
Sericobonia ignea	198
Thrinax Barbadensis	194
Todea Wilkesiana	226
Trithrinax brasiliensis	202
Vriesea (?) fenestralis	215
Vriesea (?) guttata	200
Vriesea (?) sanguinolenta	200
Wintergarden, Mr. Linden's new, at Ghent	227
Zamia Lindeni	195

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